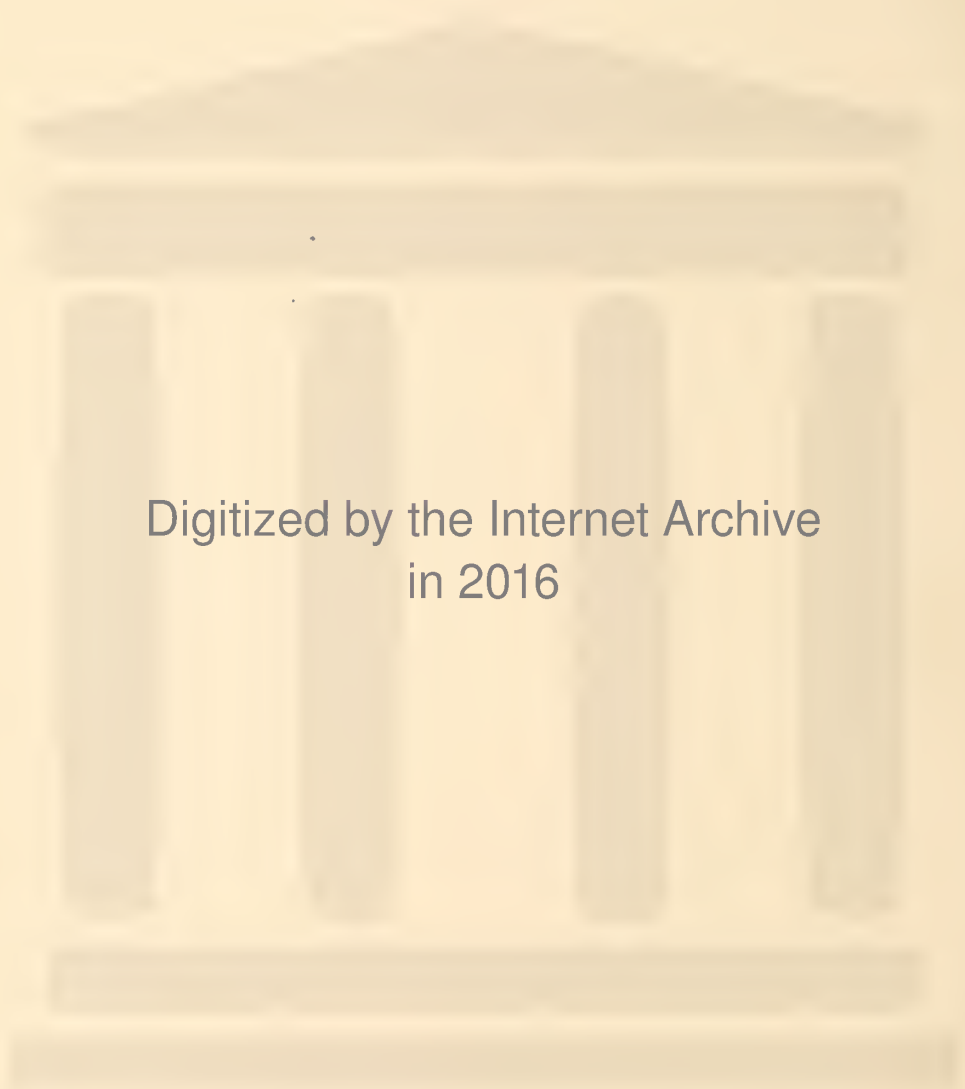


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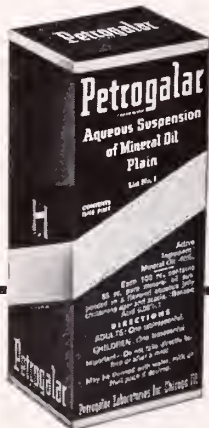
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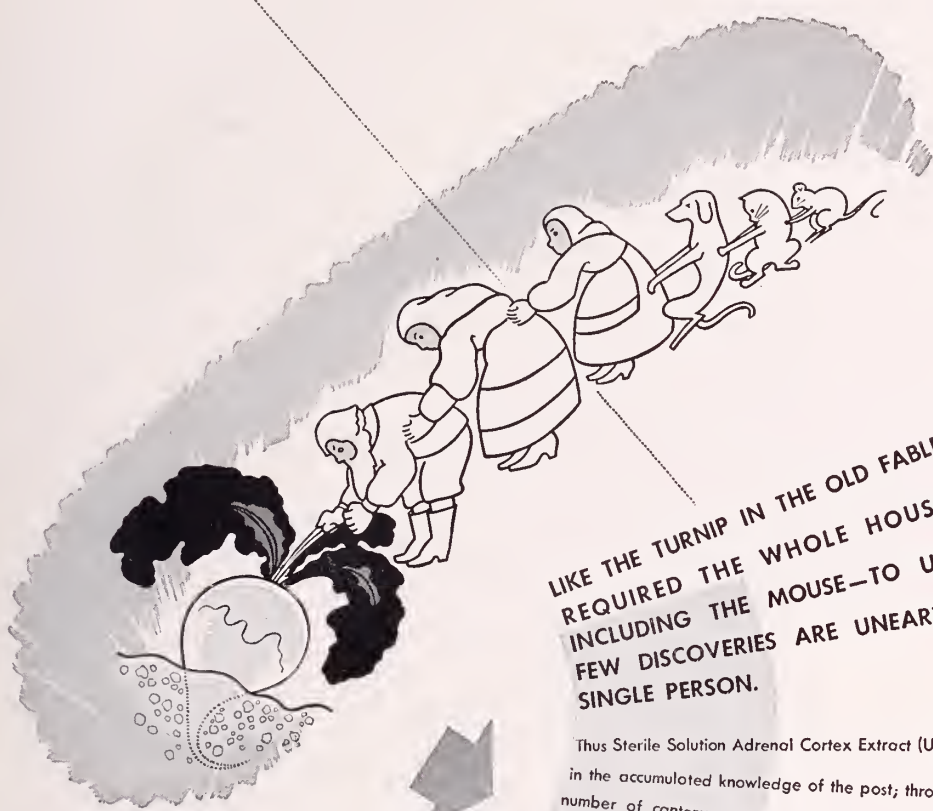
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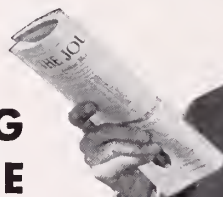
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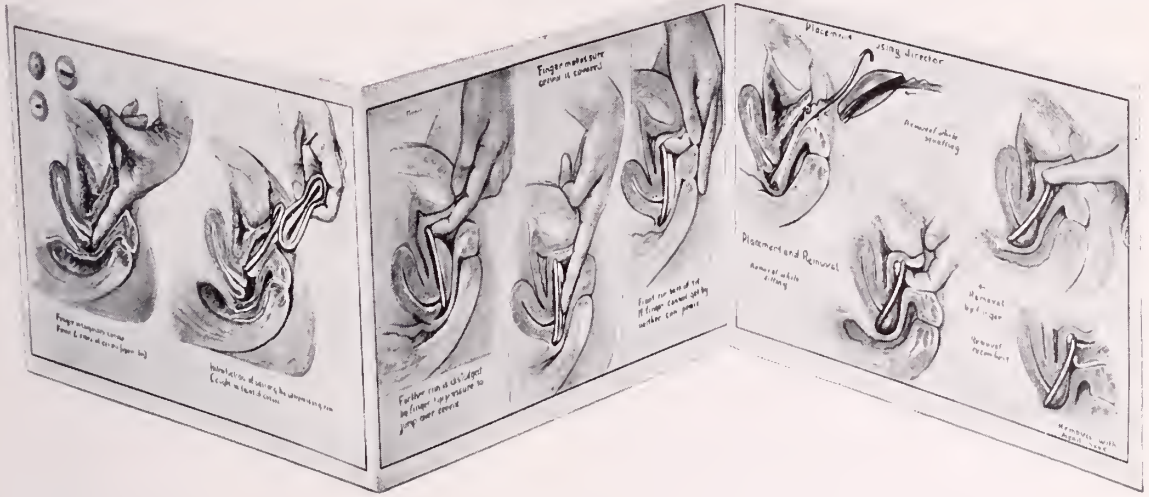
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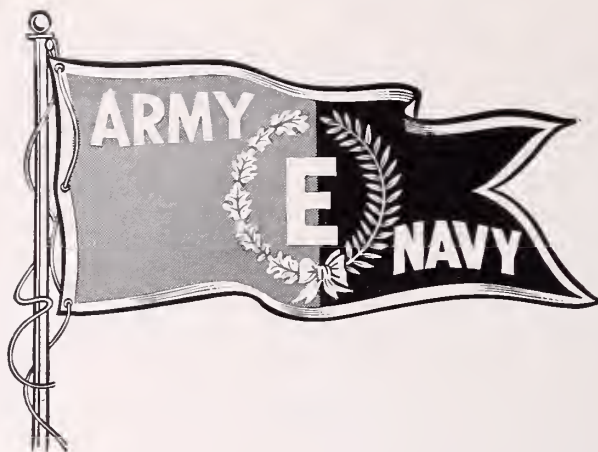
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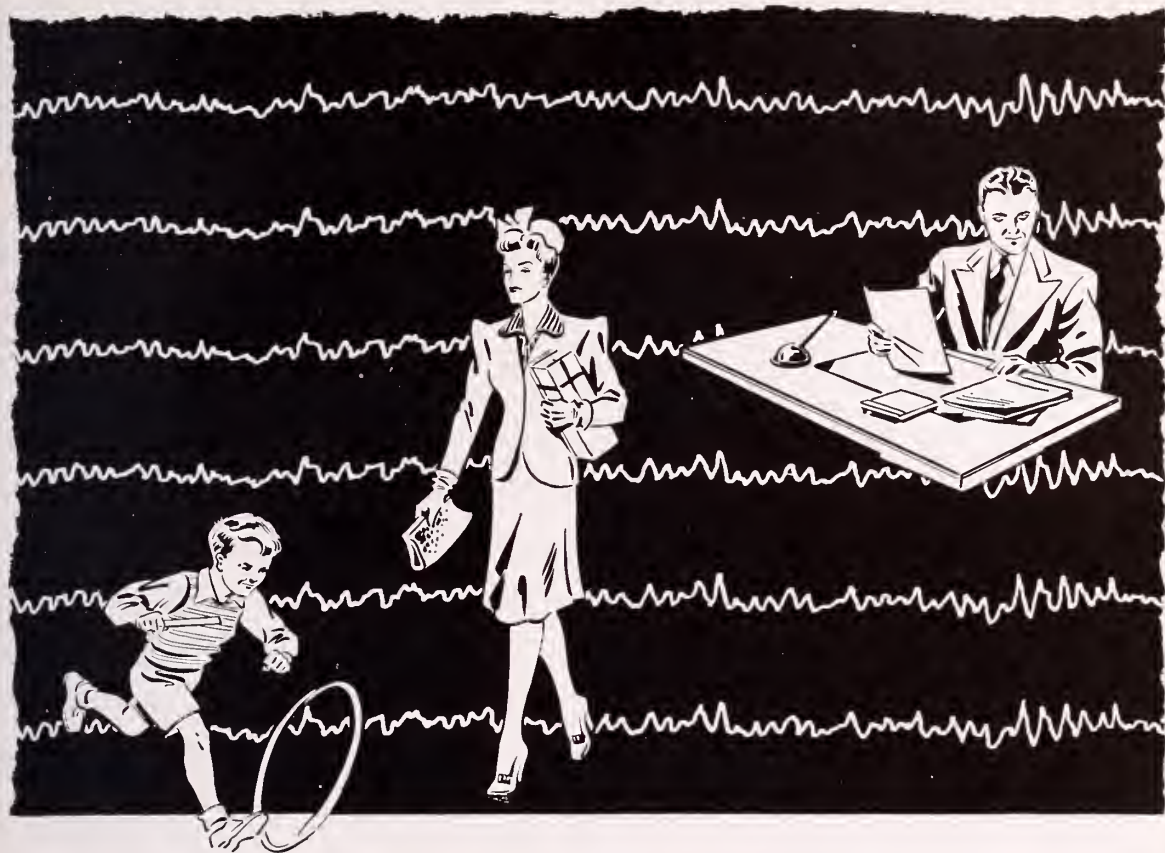
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FIRST AID IN CHEMICAL WARFARE.*

RICHMOND C. HOLCOMB, M. D.,**
Upper Darby, Pa.

Is there a likelihood that a chemical warfare will be launched against the civilian population of America? No one can answer this question. The hazards and surprises of war are many. Since the time of the cave-man, man has taken any means within his power to destroy his enemies. Such is the trend of pitiless warfare today. Therefore, as medical men, we are bound to consider not only the devastating effects of high explosives in mechanized warfare, but also the possible introduction of acute epidemical diseases, viruses, chemicals; and in short, any measures that might be adopted to destroy us and against which no peace-time treaty is an effective deterrent. The Office of Civilian Defense has included protection against gas as a necessary measure of defense, as has likewise Great Britain.

The first agent to be employed in modern chemical warfare was chlorine gas. As a surprise agent, its effect was devastating when first used against the French, Canadians, Russians, and Italians by the German Army. This gas was a lung irritant. After the invention of an effective gas mask this agent, as well as others of this nature subsequently introduced, lost much of its surprise and harassing qualities, and as a casualty agent, lost much of its effect and importance. Now it became necessary to circumvent the lung protection, and, two years later, an agent for this purpose was introduced as the blister gas or vesicant which has been named "mustard gas". From this point on, after this vesicant called mustard gas lost some of its surprise value, neutralizing agents being devised for decontamination to outwit its persistency, gases of the nature of systemic

poisons were sought. It was at about this stage of development in chemical warfare during World War I, that lewisite, a chemical of this character was prepared for use by the United States, though it was never used against the enemy. The Germans had, however, developed an arsenic gas, which was expected to possess very poisonous properties, and which it would appear when used was a disappointment to them. Among about 3,000 agents investigated for use in chemical warfare about 30 were found acceptable for use in the field, and there were others worthy of further study. Our knowledge of the use of chemical warfare agents is based largely upon experience during World War I, and it is to the records of this war that we turn for the experience in the use of these gases.

CHEMICALS VS. HIGH EXPLOSIVES AS CASUALTY AGENTS

As casualty agents, the experience to date shows that chemical agents rank far below the modern use of high explosives. During World War I, the mortality among those wounded by enemy action varied between 20 to 28 per cent. Figures for casualties among the military forces in the present war are not yet available to us, but among the undisciplined civilian population the mortality rate for this comparison is now much higher, being about 45 per cent in Spain, 41 per cent in the early raids on England, and 71 per cent for the surprise attack upon Pearl Harbor. Thus it would appear that with the changes in warfare there is also a change in the volume and character of the casualties, these being in general more numerous, severe and massive. This same thing may happen when new agents and new methods of using them are introduced in chemical warfare.

As a casualty agent, the following table would indicate the past mortality among those gassed to be five or more times less in chemical warfare than the mortality from wounds in action as cited above.

* Read before the Medical Society of Delaware, Dover, October 13, 1942.

** Captain, Medical Corps, U. S. Navy, Ret.

Table 1. Gas Casualties, World War I.

Country	Total Casualties	Killed or Died in Hospital	Mortality
France	190,000	8,000	4.2
Great Britain	180,981	6,080	3.35
Germany, 1918 only	78,000	1,755	3.00
U.S. Army, Hosp.	70,552	1,399	1.73
U.S. Marines	1,517	50	3.2

NOTE: When U. S. entered the war more than one-fourth of German artillery ammunition was gas ammunition (Curt Wachtel).

MORTALITY EXPERIENCE WITH DIFFERENT GAS AGENTS

The American forces entered the World War I after a degree of protection had been devised, which is now available to us. Among these forces, mustard gas had the greatest mortality, for this agent, without the protection of the gas mask would be a lung irritant as well as a skin vesicant. Phosgene, as might be expected, as it is seven times as toxic as chlorine, had the highest mortality among the recognized lung irritants. The mortality among 70,552 casualties among the American forces reaching the hospitals is shown in the following table. It must be stated, however, that in action when all the agents of warfare are in use, such a table might need some corrections, but there is enough delayed action in the usual field concentrations of gases to make this table informative.

Table 2. Gas Casualties, U. S. Army

Kind	Admissions	Deaths	Mortality
Mustard	27,711	599	2.16
Not given	33,587	546	1.63
Phosgene	6,834	66	0.97
Arsine	511	3	0.52
Chlorine	1,843	7	0.38
Total	70,552	1,221	1.73

(Medical Department, U. S. Army World War, Vol. xiv.)

CLASSIFICATION OF CHEMICAL AGENTS

Chlorine, the first gas to be employed in this type of warfare, in its common physical state is a true gas; consequently, this type of warfare is often referred to as gas warfare, for to be effective the agent must be in suspension in the atmosphere which of course is usually thought of as being in a gaseous state. These agents are not all gases, and may be classified as to their physical state under usual conditions as gases, such as chlorine and phosgene; as liquids, such as

mustard gas and lewisite; and as solids, such as tear gas and adamsite. Some of them are identified by a peculiar odor which is described as like garlie, horseradish, mustard, geranium, flypaper, anise, ensilage, musty hay, green corn, apple blossoms, sour fruit, stove polish, matches, acrid, pungent, etc., all of which, in the abstract, is very confusing, so that sniff sets have been devised to teach a familiarity, by practice, with the odor of a few of the more important gases. As gases are frequently mixed, identification by odor alone is not always sure when taken by itself, but is very helpful when considered with other factors such as the persistency and the immediate physiological effect.

Persistency. A very important consideration is the persistency of the liquid, vapor or gas in dangerous concentration. For instance, it is well known if we were to take a liquid with a high boiling point like ether, which boils at blood temperature, and also a volatile oil like the oil of cloves, the ether would go into suspension in the atmosphere much faster than the volatile oil, the odor of which would persist for a longer time. In general the vesicants are the most persistent. Mustard gas may persist for one day or one week, and even longer in cold weather, for the freezing point of this liquid, depending on its impurities, varies from 46°F. to 50°F. Of the lung irritants, chlorpierin is the most persistent, and may last for six hours in the open, and double this time in the woods. As for the other lung irritants such as chlorine, phosgene and diphosgene, in ordinary field concentrations their persistence is not rated at over 10 to 30 minutes. The effect of all gases depends upon their concentration, and those favorable weather conditions which would not hastily disperse them. In field concentrations, where the total volume is not influenced by such limitations as woods, low places, tunnels, etc., they may vary in a considerable degree, but as all gases utilized are heavier than the atmosphere, they will flow into and accumulate in greatest concentration in low places.

Physiological classification. When grouping these agents as to their physiological action, it should be remembered that such a

classification is based only on the most pronounced effects. They are suspended locally in the atmosphere which we breathe, thus practically all of them are in some degree lung or respiratory irritants. Some, like chlorpicrin, irritate the eyes and cause the tears to flow, but are not classified as tear gases, as they cause other more serious injury. Both mustard and lewisite are deadly to breathe, but they also injure any part of the body they contact, including the outer or skin surface, which causes them to be classified as blistering agents or vesicants.

Immediate effect. The Medical Division of

the Office of Civilian Defense considers twenty agents in connection with first aid, and these agents are subdivided into seven classes, namely: (a) lung irritants, (b) blister gases, (c) tear gases, (d) irritant smokes, (e) incendiaries, (f) screening smokes, and (g) systemic poisons. When used unmixed they may be recognized in part by their odor and their immediate physiological effect. Some, like chlorpicrin, may cause lacrimation in low concentrations, noticeable even before the odor will be detected. Others, like the lung irritant phosgene, and the vesicant mustard gas, may be delayed in their serious symp-

Table 3. Classification, Odor and Immediate Effect.

Physiological classification	Chemical Warfare Symbol	Odor	Other Immediate Effects
LUNG IRRITANTS			
Phosgene	CG	Silage; fresh-cut hay	Coughing; tightness in chest; eye irritation
Chlorpicrin	PS	Sweetish; flypaper	Tears; nose and throat irritation; vomiting
Chlorine	CL	Disagreeable; like bleaching powder	Choking; coughing; pain in the chest; smarting eyes
Nitric fumes		Pungent	Coughing; brown stain
BLISTER CASES (Vesicants)			
Mustard	HS	Garlic; horseradish	None
Lewisite	M-1	Geraniums	Smarting skin; burning eyes
Ethylidichlorarsine	ED	Biting	Nasal irritation
TEAR GASES			
Chloracetophenone (also solution)	CN	Locust or apple blossoms; fruity	Flow of tears; irritation of skin
CNB solution		Tire patching cement	Flow of tears
Brombenzylcyanide	CA	Sour fruit	Flow of tears; nasal irritation
IRRITANT SMOKES			
Adamsite	DM	None	Headache; vomiting
Diphenylchlorarsine	DA	None	Sneezing; vomiting; headache
INCENDIARIES			
White phosphorus	WP	Matches	Burns; glow from particles (also used as screening smoke)
SCREENING SMOKES			
HC Mixture	HC	Acrid	Slight suffocating feeling
Sulfur trioxide in chlorosulphonic acid	FS	Acrid (strong)	Prickly sensation on the skin; eye irritation
Titanium tetrachloride	FM	Acrid (mild)	Slight eye irritation
SYSTEMIC POISONS			
Hydrocyanic acid		Bitter almonds	Headache; dizziness; collapse
Arsine		Garlic; metallic taste	None
Hydrogen sulfide		Rotten eggs	Headache; dizziness; collapse
Carbon monoxide		None	Headache; collapse

toms, and from the medical standpoint these two groups of gases are very important. All factors, such as odor, delay in action, persistency, immediate physiological action, and smoke particles, are useful in identifying the gas.

The twenty agents mentioned above are thus classified.

LUNG IRRITANTS

A lung irritant was the first gas to be used, April, 1915, by the Germans. This agent, chlorine, a true gas, was first employed by spraying the compressed gas from cylinders, under favorable wind and weather conditions, the presence of light airs to waft the gas toward the enemy. The unprepared state of the French, British, Russians and Italians, when it was first used, led to results far beyond those which occurred later when protection against them was devised. Shortly afterwards other lung irritants such as phosgene, diphosgene, and chlorpicrin came into use, either alone or in mixture. The method of spraying from cylinders into a wind of favorable direction and velocity, was soon improved by the use of other means, such as by firing the agent in explosive projectiles, by mortar bombs, and by mining, etc. The more modern use of these agents will be by airplane, which can carry the agent far beyond the range of the projectile from the largest gun, and in a quantity, not only as a bomb, but it can also be sprayed from tanks of large size.

The following table will illustrate the results which followed the use of these gases:

Table 4. German Use of Lung Irritants

Gas	Date	Casualties Killed		Against
Chlorine	April 15, 1915	15,000	5,000	French
Chlorine	May 31, 1915	15,000	6,000	Russians
Chlorine & Phosgene	Oct. 19-20, 1915	4,281	815	French
Chlorine & Phosgene	Dec. 12, 1915	1,069	120	British
Chlorine & Phosgene	Feb. 21, 1916	1,006	283	French
Chlorine & Phosgene	Apr. 30, 1916	512	89	British

NOTE: By 1918, gas mask protection was so good that in 14 gas attacks made the first 5 months, in 7 there were no deaths, and the number of casualties in the others varied from 7 to 78.

Delay in action. With all lung irritants there is a latent period before the serious symptoms appear in the lungs, varying in time from 1 to 12 hours from the exposure,

after which period symptoms of pulmonary edema develop with a dramatic suddenness. In general the latency of their action is indicated as follows:

Phosgene	}	1. Delay in action.
Diphosgene		2. Not noticeably irritating when breathed.
Nitric Fumes		3. Reaches deeply into the lungs in concentration.
Chlorine	}	1. Action more prompt.
Chlorpicrin		2. Quickly affects eyes and nasal passages.

The physical signs at first may be scanty, or not detected, and though phosgene is much more toxic than chlorine, the latent stage, as indicated above, is more prolonged. Within the lungs themselves a pulmonary edema is slowly developing. Two clinical types or stages are described, the blue and the gray stage.

Blue type. In addition to general symptoms such as an increased respiratory rate, cough with perhaps even blood-streaked expectoration, a deep cyanosis with engorgement of the veins of the neck occurs. This aspect is called the blue stage. As a result of increasing exudation in the alveoli, with some degree of anoxemia, blood is dammed back to the right side of the heart, which at autopsy is frequently found dilated. Morphine or other respiratory depressant should not be used, nor any measures of exertion, including artificial respiration. The best results during this congestive stage is venesection, to relieve the strain on the right side of the heart, and which measure proves satisfactory to the doctor and the patient alike. In this condition there is an increase in the viscosity of the blood, which may make direct incision into the vein necessary.

Grey type. The other type or stage is sometimes called the gray stage of asphyxia. The face in this stage assumes an ashen hue, the neck veins collapse, and the blood pressure drops. Now the increasing edema, and lung changes lessen the oxygen absorption by the capillaries, which leads to anoxemia, m-

creased viscosity of the blood with thrombosis, and general symptoms resembling shock. Venesection is not indicated in this stage. Cardiac stimulants such as digitalis, caffeine, and coramine have been found of little value, and reliance is placed more upon oxygen inhalation to relieve the anoxemia of the laboring heart muscle resulting from the oxygen starvation and other causes.

Most deaths occur during the first 24 hours. The most frequent of the sequelae is bronchopneumonia. Bronchitis and bronchiectasis may result from chlorine and phosgene poisoning. Chlorpierin irritates not only the alveoli, but also the trachea and the upper bronchi and bronchioles. As a result, exudative plugging from this gas may cause scattered areas of pulmonary emphysema in the lungs.

VESICANTS

Mustard gas, the first vesicant to be used, was employed by the Germans against the British in July, 1917, and its use was continued throughout the rest of the war. The vesicants in general are heavy liquids or an invisible vapor. As such they will permeate materials of a porous character, rendering them dangerous to touch until decontaminated. Because of this permeability first aid must be prompt, for they can permeate the clothing as well as the exposed skin. The agent in the form of liquid splashes or invisible spray of droplets represents a high concentration which "soaks" into the skin as ink on blotting paper. First aid measures should not be delayed beyond five minutes if on the skin, or beyond ten minutes if on the clothing. Prompt measures for decontamination may be considered in terms of the use of (a) neutralizers, (b) solvents, (c) detergents. Later treatment of the (d) resulting burn, and (e) the effect of the systemic poison must also be considered.

The following table compiled from German figures of 71 mustard gas attacks directed against the British, represents very well the claims of this gas as a casualty agent. It is obvious that as its use continued the mortality diminished even if it was the most destructive and harassing gas measure of the war.

Table 5. German Use of Vesicants
(Selected from German figures of 71 Mustard gas attacks on British)

Gas	Date	Casualties	Killed	Against
Mustard	July 21, 1917	2,934	101	British
Mustard	July 28, 1917	6,474	146	British
Mustard	Dec. 15, 1917	768	9	British
Mustard	Mar. 16, 1918	6,195	39	British
Mustard	Mar. 23, 1918	6,874	36	British
Mustard	April 13, 1918	6,940	20	British
Mustard	Aug. 31, 1918	6,265	54	British
(the above was the largest number killed since Oct. 1917)				
Mustard	Sept. 7, 1918	6,134	36	British
Mustard	Oct. 19, 1918	4,407	31	British
Mustard	Nov. 16, 1918	367	9	British

Neutralizing agents. The protective ointment of the Chemical Warfare Service, known as Protective Ointment MIV, is the ideal protective application and neutralizer, but this is not apt to be available for civilian use. Recent orders in England require the pharmacist to keep a handy bucket of bleach powder paste for emergency use outside his shop at all times. Bleach powder was used abroad in both the dry form and as a paste. In the dry form it generates heat when mixed with water, which should be avoided. It is useless if applied more than two hours after the exposure. The paste should never be allowed to remain on the skin longer than three or four hours, as it is itself an irritant and corrosive. Dichloramine-T, first used as a 5 per cent solution in oil, was found effective, as it liberates chlorine, and is less irritating than chloride of lime. The ideal method for cleansing the skin where it may be done promptly proved to be thorough cleansing with soap and water. Bleaching solutions of sodium hypochlorite, readily available in most household laundries, has been suggested where other preparations are not readily available in an emergency. For lewisite, the neutralizing agent recommended is hydrogen peroxide in 8 per cent solution. A 29-30 per cent solution is available commercially, but the U. S. P. solution usually sold in the drug stores is a 3 per cent solution, and this may be used where the stronger and more preferable strength is not available.

Solvents. Here again several handy liquids are recommended, such as non-leaded gasoline, alcohol, kerosene, and carbon tetrachloride (pyrene). Such agents must be used with care and applied with a cloth simply dampened, so the irritant will not be spread by the excess of the solvent. These are of

doubtful use if a neutralizing agent has been employed.

Detergents. Water is not a ready solvent of these agents, but with a soap detergent, it will mechanically remove them from the skin. Thorough cleansing with soap and water has been a very satisfactory measure. If possible, wash in running water and cleanse thoroughly. This should be done promptly and before the liquid soaks into the deep layers of the skin, and when applied promptly and thoroughly, it has proved a very efficacious measure. In England, according to a recent instruction issued the civilian population, the victim may demand soap and water at the nearest house. He ought then, if near his home, proceed there, discard all clothing, bathe, and dress in a fresh outfit.

Treatment of burns from vesicants, as well as the treatment for lung irritants other than the first aid, is not dealt with here and for these measures reference should be made to the list of publications appended. This also applies to the systemic poisoning occasioned by lewisite, which, in burns by this liquid on the skin, may require a very radical treatment, such as excision of the burned area.

FIRST AID PROCEDURE FOR CHEMICAL WARFARE AGENTS

For Mustard On Skin

1. Remove and discard all contaminated clothing.
2. Remove excess mustard on skin with cotton waste or cloth.
3. Apply protective ointment, MIV, and rub in for one minute.
4. Wash thoroughly with soap and water within ten (10) minutes or cleanse thoroughly with kerosene.
5. Use only soap and water if redness has appeared.

For Lewisite On Skin

1. Remove and discard all contaminated clothing.
2. Remove excess lewisite on skin.
3. Apply 3 per cent hydrogen peroxide (preferably 8 per cent) continuously for four or five minutes.
4. Wash thoroughly with soap and water.
5. Protective ointment MIV is applied, removed, and reapplied four or five times, if H₂O₂ is not available. It should be used within five minutes after exposure.

For Mustard In Eyes

1. Wash immediately with 2 per cent solution of sodium bicarbonate (baking soda) and continuously for five or ten minutes.
2. Evacuate to hospital.

For Lewisite In Eyes

1. 0.5 per cent hydrogen peroxide may be used for lewisite in the eyes, followed immediately by irrigations with 2 per cent sodium bicarbonate solution.
2. Evacuate to hospital.

For Lung Irritants—Chlorine, Phosgene and Chlorpierin

1. Put at absolute rest in prone position.
2. Cover with blankets, overcoats or other material to keep patient warm.
3. Give warm drinks, such as tea, coffee, or cocoa.
4. Evacuate to hospital as litter case.

For Tear Gas—CN, CNS, CNB

1. Wash eyes with 2 per cent sodium bicarbonate solution if there is still irritation after coming out of the area.
2. Tear gas should be removed from skin by 4 per cent sodium sulphite in 50 per cent alcohol.

For Irritant Smokes—DM, DA

1. Remove clothing after getting out of area and take complete bath.
2. Give aspirin for headache.
3. Irrigate nose and throat with 2 per cent sodium bicarbonate solution.
4. If symptoms persist, evacuate to hospital.

White Phosphorus—WP

1. Remove particles from skin or clothing immediately.
2. Immerse in water or cover with 5 per cent copper sulphate solution.
3. Evacuate to hospital for removal of particles and treatment of burn.

AGENTS FOR FIRST AID FOR GAS CASUALTIES

	Unit	Amount
1. Cupric sulfate	1 lb.	1 box
Used in 2 to 5 per cent solution for white phosphorous burns.		
2. Sodium bicarbonate	1 lb.	1 box
Used to make 2 per cent solution for lavage of eyes, nose and throat after exposure to HS or M-1.		
3. Protective ointment MIV	3 oz.	6
Used to protect exposed parts and for neutralization tube and removal of vesicants.		
4. Dichloramine "T"	pint	1
20 per cent solution in triacetin.		
Used for decontamination of mustard on skin.		
5. Soap, Army issue (a brown alkaline soap)	cake	2
Used for removing vesicant from the skin.		
6. Kerosene	pint	1
Solvent for removing liquid vesicants from skin in usual use.		
7. 4 per cent solution sodium sulphite in 50 per cent alcohol.	8 oz.	1
Used in removing CN, CNB and CNS (tear gases) from the skin.		
8. 4 per cent boric acid solution.	4 oz.	1
Used for irrigating eyes.		

- | | | |
|--|-------|---|
| 9. Hydrogen peroxide 3 per cent
(preferably 8 per cent)
Used for first aid for lewisite on skin. | pints | 4 |
| 10. Distilled water.
Used for making up solutions for eye wash. | pints | 3 |

Protection. Here we may consider protection of the individual, protection of a group of individuals, and protection of food and water.

The protection against the lung irritants is by gas mask. There are several types issued to the services, and they commonly consist of a filter to screen out smoke particles within a canister containing activated charcoal and soda lime. (see reference 5).

The *protection of the individual* against vesicants consists of especially treated underclothing, outer clothing, shoes, gloves, hoods etc. (ref. 5).

Group protection involves the selection of a room of known cubic capacity, sealed against the entrance of gas, to contain sufficient air content to support the required number of persons the required number of hours. If ventilation is provided, the air must be delivered only after passing through a large canister tank for decontamination. Food and water must also be protected against contamination (ref. 5).

Decontamination. There are two types of decontamination: first, squads concerned with the decontamination of material; and second, stations concerned with the decontamination of persons of both sexes.

Decontamination squads are not a part of the Emergency Medical Service and are not considered here.

Those concerned with personnel decontamination should be protected in their persons to the same extent as the squads concerned with the material decontamination. They are not sent to an incident, as are the former, but function at an especially planned station, provided with rooms for disrobing, rooms for decontamination of the person, provided with ample showers, and rooms for dressing. The scheme is elaborate, provides the above rooms in duplicate, one for each sex, together with water heaters of very large capacity, fresh clothing for both sexes etc. (ref. 4).

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3. Wachtel, Curt, Chemical Warfare; Pharmacological Section of Kaiser Wilhelm Institute, Brooklyn, 1941.
4. Medical Manual of Chemical Warfare (Reprinted by permission of the Controller of His Britannic Majesty's Stationary Office), Brooklyn, 1941.
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HOSPITALS AND COMPULSORY HOSPITAL INSURANCE

"Every governmental energy must be concentrated on winning the war. Reforms or making America over cannot but dislocate the war effort." This statement by ex-President Hoover in his twelve points of vital interest to the Home Front is so axiomatic that it should delay additional social-security legislation until the war has been won. Regardless of its virtues or defects, legislation that will profoundly affect the postwar American way of life should be postponed for consideration with other peacetime readjustments. However, since bills of this type have already been submitted to Congress and since silence might be taken for assent or approval, discussion appears to be necessary.

Such a bill, "To amend and extend the provisions of the Social Security Act; to establish a federal social-insurance system; to extend the coverage of federal old-age and survivors' insurance; to provide insurance benefits for workers permanently and totally disabled; to establish a federal system of unemployment compensation and temporary disability benefits and a federal system of unemployment offices; to establish a federal system of hospitalization benefits; to amend the Internal Revenue Code; and for other purposes," has been introduced by Representative Thomas H. Eliot, of Massachusetts. Without consideration or comment on the other parts of the bill, the proposal "to establish a federal system of hospitalization benefits," or, in other words, "compulsory hospital insurance," as it is commonly called, deserves critical comment.

At the present time in the United States there is a widespread and rapidly growing system of voluntary hospital insurance known as the Blue Cross Plan. The basic philosophy

underlying such voluntary hospital insurance is radically different from that of compulsory hospital insurance, in spite of their aiming at the same objective.

Voluntary insurance, as its name implies, connotes a voluntary act on the part of the insured, as the result of consideration and decision. It requires thinking. Thus it exemplifies the essence of democracy. By thinking, choice and action the subscriber becomes a better citizen, and by the development of his will and initiative the community is benefitted and improved. It is a slow process, but sure.

Compulsory insurance, likewise, is self-descriptive for its means that all persons falling within its provisions shall, willy-nilly, comply with its regulations. There is no opportunity for choice or decision. Essentially it is taxation under another name. It is regimentation held to be justifiable by the claim that it is for the benefit of the insured, that it spreads the burden and that it forces the improvident to provide. Its proponents claim that it will achieve in one year what voluntary insurance would require many years to accomplish and that it would eliminate charity and so increase the self-respect of former recipients. They compare by analogy the anticipated benefits of compulsory hospital insurance to the good accomplished by the Workmen's Compensation acts, forgetting that in the latter case no voluntary plan was available.

Voluntary hospital insurance has been available for ten years. New and not understood, growth during the early years was slow. It has rapidly expanded during the last five years, and now over ten million people are insured under this plan. It is spreading rapidly. Reciprocity between plans is accepted in principle and practice. In collaboration with state and local medical societies, plans for the coverage of medical fees for hospital care are being developed, and in some states are already in operation. Since it operates within state boundaries, it is adaptable to local conditions. Since it is a nonprofit corporation, it is flexible and can adjust to new conditions without resort to legislation. Since it is subject to regulation by state commissions of insurance and wel-

fare, its subscribers are protected from exploitation. Its cost of operation has been uniformly low.

There is no opposition on the part of the American Hospital Association or of most hospital administrators to the provision of better hospitals in rural areas, to the extension of hospital care for certain public-assistance categories, such as the aged, and even to the consideration of compulsory hospital insurance. But they believe that the resulting plan should be the product of collaboration and co-operation by the Social Security Board, hospital representatives, physicians and representatives of the charitable, labor and welfare organizations of the community and that this collaboration should take place at a time when adequate and contemplative consideration can be given to a problem so vitally affecting American life. The American Hospital Association is actively furthering the extension and liberalization of Blue Cross plans, an endeavor that can go on during the emergency without hampering the war effort, since the methods and machinery are already in operation.

Specific defects in the Eliot bill can be noted as follows:

The proposed federalization scraps the present relation provided by the Social Security Act between the states and the federal government.

The United States is too large and too varied to be adequately legislated for on a matter so vitally influenced by local conditions. States can give better adjustment and control, according to local needs.

The bill requires the setting up of a new bureau for administration and operation at a time when the manpower of the nation is already overextended, and with the certainty of added cost.

Nothing in the bill remedies the lack of medical care and hospital facilities in rural areas. In fact, the bill expressly prohibits the use of money for this purpose.

The bill does not adequately separate administration and payments for hospitalization and disability benefits. The experiences of European plans point to the necessity of this separation.

The bill as drawn gives no consideration to the necessity of preserving voluntary plans. The present hospital system is based on the co-operation of voluntary and governmental hospitals, which supplement each other in caring for all classes of the community. If compulsory insurance is instituted, certainly a similar co-operation should be provided for with voluntary insurance. Otherwise it will probably mean the gradual destruction of philanthropy, for local interest will be difficult to sustain if the federal government assumes leadership and responsibility. Local morale suffers under remote control, and there would be no incentive for experimentation in different localities to meet varying conditions.

There is no consideration of medical-care fees, a program that is now going forward under the leadership of the voluntary plans.

The problem boils down, finally, to an evaluation of the moral values inherent in voluntary plans contrasted with the expected material values of compulsory plans. It is essentially individualism versus regimentation. Further consideration of such social readjustments should not be undertaken during the stress of war conditions, but should be put off for consideration after the war is won. Probably a satisfactory compromise between the two extremes can then be obtained.—Editorial, *N. Eng. J. M.*, Dec. 17, 1942.

WAR AND SOCIAL REFORM, II*

"Society is an organism subject to all the laws of evolution," said Dr. G. W. Cottis,¹ President of the Medical Society of the State of New York, "and medicine is an organ of vital importance in that organism. There is of necessity a constant interrelationship between the two, and we cannot appraise our situation apart from that of society as a whole." For this reason, we are convinced that at this time editorial emphasis upon social, economic, and political proposals for change is imperative. We have had so much scientific and technical progress in medicine and other fields in so short a time that the great problem now is how to use it in the most efficient and equitable manner. It is by no means a simple problem or one which lends itself readily to scientific analysis, for it involves people, their ideas, their wants, their laws, their industry and agriculture, as well as their ills, and their aspirations.

"Where there is no vision, the people perish," says the Old Testament.² At present, human beings aspire to security, personal and social, economic and otherwise. Well, human beings have always done that, and have, in addition, gone a long way on the road to its attainment.

"Under the smoke and fire of battles we might see all the people of the earth," continues Dr. Cottis, "moving like a tidal wave in one direction. That direction is toward a new form of society in which independence is replaced by dependence, and freedom traded

for security. The leaders who promise these are the ones the people follow. The security they seek and demand is security against want, hardship, and illness. That is the negative way of saying that they demand assurance of shelter, food, clothing, recreation, and medical care without much regard to their ability to earn them."¹

The "Beveridge Report" seems, on examination, not to be quite the "revolutionary" document which was anticipated.³ At Oxford Town Hall, its author is reported to have said on December 6, in part:

"If we have mass unemployment we may not be able to carry out the proposals of my report. . . . I simply won't believe it is impossible to abolish mass unemployment, yet I do not know how it is to be done and do not even know whether anyone else does."

Fair enough; neither do we.

"The Australian Labor Government's plan for social security after the war is similar to Sir William Beveridge's, but is much more comprehensive. It is estimated it will cost £50,000,000 to £60,000,000 yearly, according to the range of benefits finally included, and will provide maternity allowance, child endowment, widows' pensions, health and unemployment insurance, free hospital and medical services irrespective of income, old-age pensions without a means test much larger than those now paid, and a living allowance on a family basis probably equal to the present basic wage of about £4 10s. weekly during unemployment.

"A government spokesman said the aim would be to provide security from the cradle to the grave.

"The health plan will involve the zoning of Australia into medical districts and the employment of 2,000 doctors and thousands of nurses and salaried staffs of hospitals and health centers. It is suggested that doctors demobilized from the fighting forces might be absorbed into this scheme.

"The Commonwealth may take over public hospitals, now a responsibility of the States. Doctors' salaries would range from £800 for junior general practitioners to £1,650 for senior physicians and surgeons. There would be more than 450 new one-man health centers throughout the Commonwealth.

"Cities also would be zoned, Sydney having thirty-five health centers; Melbourne, 25. Infant health centers and convalescent and rest centers would also form part of the scheme."⁴

Just how all this is to be accomplished in face of the mass unemployment which, if history repeats itself, is to be anticipated after the war we haven't an idea.

We do know that here in the state of New York,⁵ the public medical-care program laid down by practical, hard-headed representatives of the Medical Society of the State of

* This is the second editorial of a series.

New York and the State Department of Social Welfare* in some respects right now goes farther than the projected medical service plans of either Sir William Beveridge or the Australian Labor Government. To quote Lee C. Dowling, Deputy Commissioner for Public Assistance of the State Department of Social Welfare, in part: "That this was done without regimented socialization of private medicine, without injury to the doctor-patient relationship, without adversely affecting the economics of private practice—and with a measurable improvement in the quality, quantity, and efficiency of medical services—is a singular achievement. . . . Further, . . . this plan comprises a partnership of government and the medical profession functioning cooperatively in the interests of the public health and welfare. . . ."

Medical care⁶ is construed to include necessary preventive, diagnostic, corrective, and curative services, and supplies essential thereto, provided by qualified medical and related personnel for conditions in a person that cause acute suffering, endanger life, result in illness or infirmity, interfere with his capacity for normal activities, or threaten some significant handicap. In the provision of such medical care, full and proper use shall be made of existing public and private medical and health services and facilities.

The medical care plan provides for (a) local medical direction and administration for a clearly defined local program, (b) medical and social coordination, with suitable medical and fiscal record-keeping, and (c) integration with community medical and health resources. The pattern for providing the items of medical care listed below may include any combination of the following:

- (a) Free choice of physician and fee-for-service system
- (b) A salaried system rotating or fixed according to circumstances
- (c) A rotating panel system
- (d) Specialists' services and hospital care according to approved local practices

The local plan in New York state may provide for all forms of medical care including—*regardless of the extent of state participation*

Acute illness, home or office
Ambulance service
Boarding homes for invalids
Chronic illness, home, office, etc.
Clinic care, by referral
Consultant services
Dental care, including
 Prophylaxis
 Treatment
 Fillings
 Extractions
 Dental surgery
 Dentures
Drugs, serums, etc.
Eye examinations
Eyeglasses and glass eyes
Fractures
Hospital care
Laboratory services
Major surgery, home or hospital
Medical services in hospital
Minor surgery
Nursing care, including
 Visiting nurse, per visit
 Registered nurse, per day
 Practical nurse, per day
 Home medical aids
Nursing-home care
Obstetrics, home or hospital
Physiotherapy
Pneumonia treatment
Preventive services, by referral
Prosthetic or surgical appliances
Radium treatment
Sickroom supplies
Specialist services
Tuberculosis treatment, home
Venereal disease treatment
X-ray diagnosis
X-ray treatment

We recommend to all who are interested in the medical care aspects of social security the method of procedure followed in the State of New York⁵ so clearly set forth by Mr. Dowling; namely building from the ground up, not from the top down. The method has this advantage: it works with a minimum of bureaucratic control; it is founded on well-understood principles; it works in times of peace; it does not require a state of war to assure its continuance; it operates within the framework of reality as a partnership; it "indicates that the medical profession can work with government agencies without surrendering its own freedom of action or lowering its standard of service. . . . It may avert the evils of state medicine."⁷

Editorial, *N. Y. St. J. M.*, Jan. 15, 1943.

1. First District Branch Meeting, Oct. 7, 1942.
2. Proverbs 9: 18.
3. New York State J. Med. 43: No. 1: 25 (Jan. 1) 1943.
4. New York Times, Dec. 7, 1942.
5. New York State J. Med. 42: No. 9: 904 ff. (May 1) 1942.
6. Under Section 184, Social Welfare Law, State of New York.
7. New York State J. Med. 42: No. 22: 2100 (Nov. 15) 1942.

* 1940.

—many or all of the following:

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No. 1

AIR RAID DRILLS: A QUERY

During blackout drills, emergency motor vehicles, properly identified as such, are permitted to move under stringent regulations. Both the permission and the regulation are proper, and under both the physician can continue his services to the public.

During air raid drills, however, whether they come during the day or the night, only military, defense, police, or emergency repair vehicles can move. The physician, like the public he serves, is immobilized till the all-clear is sounded. Just how, in an honest-to-God blitz, the physician, who alone may be able to save life in such an emergency, is to function deponent sayeth not. The only balm here is the fact that we do not look for a sustained blitz—enemy actions must, perforce, be limited to rather short hit and run affairs. The sad part about such affairs is that the experience abroad has been that civilian rather than military damage results. Long

or short though the affair may be, the physician is immobilized.

Passing from the life risk to the business loss risk, we have been asked by several of our confreres how a physician—or a layman—can catch a train or a plane if an air raid drill comes along just as he is about to leave home for the train. We refer, of course, to long distance trips, say Chicago or California on important business, where through reservations must be made days and sometimes weeks in advance. The train will not wait, and the traveler, immobilized, misses it and also its farther connections, thereby sustaining a business loss. Who pays for this loss?

To our non-legal mind it seems that a distinction must be made between the drills *ordered* by the military command, and the drills *permitted* by the command, on application of the local OCD. In the former, we doubt if any redress for loss could be had; in the latter we believe redress would be possible, though it would probably involve expensive legal procedures. We recently put this query to Mr. Edwin F. Koester, the Wilmington coordinator of the OCD, who preferred to make no statement on the question of redress for loss under such circumstances.

Mr. Koester did, however, make some helpful comments. He informed us that, in Wilmington, at least, the air raid drills would be publicized (1) to the extent that we would know within what dates a surprise drill would be held; and (2) they would be short—20 to 30 minutes only. His advice to all persons with distant, important or expensive travel reservations is, within those dates, to allow the usual time to get from home to the station plus one-half to three-quarters of an hour extra. This makes sense, even though it also makes inconvenience; it is better to waste an hour in the station than miss your train, miss also your far-western connections, and perhaps sustain a substantial business loss.

The main question, however, as to who pays for a loss sustained as a result of a *practice* drill, remains unanswered, though an authoritative answer should be forthcoming.

P. & A. S.

"It is of the utmost importance that the Procurement and Assignment Service for Physicians, Dentists, and Veterinarians, immediately has the name of any doctor who really is willing to be dislocated for service, either in industry or in over-populated areas, and who has not been declared essential to his present locality. This is necessary if the medical profession is to be able to meet these needs adequately and promptly. We urgently request that any physician over the age of 45 who wishes to participate in the war effort send in his name to the State Chairman for the Procurement and Assignment Service in his State."

Sincerely yours,

FRANK H. LAHEY, M. D.,
Chairman, Directing Board,
Procurement and Assignment Service
for Physicians, Dentists, and
Veterinarians.

Plasma For Civilian Defense

The Medical Division of the Office of Civilian Defense and the United States Public Health Service report the current status of the blood plasma program which was initiated in the early spring.

The report indicates that 130 hospitals have now received grants-in-aid and are preparing reserves of plasma to total at least 63,130 units. In addition to this reserve, 27,500 units of frozen plasma have been obtained through the Army and Navy from blood collected by the American Red Cross. This supply has been distributed. The Medical Division has also procured 37,500 units of dried plasma from blood collected by the American Red Cross, and this supply is in process of distribution.

The total reserve, which is largely concentrated in the 300-mile coastal target areas, will be 126,630 units for treatment of casualties resulting from enemy action. In addition, 1,250 units are in Puerto Rico and 250 in Alaska.

In addition to these sources of plasma, the Red Cross is distributing to target areas 5,000 units which will be available to the Office of Civilian Defense for treatment of civilian casualties resulting from enemy action.

Many hospitals which have not received grants under the OCD-USPHS program are also preparing plasma reserves which total approximately 50,000 units.

Plasma required for the treatment of war-related injuries may be obtained by any community through its Chief of Emergency Medical Service. To meet such emergencies, plasma may be transferred: (1) within a State by the State Chief of Emergency Medical Service; (2) within a Region, by the Regional Medical Officer; and (3) from one Region to another by the Medical Division, U. S. Office of Civilian Defense. Following is the most recent statement of the amounts of plasma available in each Civilian Defense Region:

Region II (New York, New Jersey, Delaware)

In preparation:

19,080 units in 33 Grantee Hospitals

7,500 units of Dried Plasma

Distributed:

6,000 units of Frozen Plasma

32,580 Total Units

Ed. Note—See previous report, this Journal, October, 1942, page 212.)

New Journal Coming

The American Gastroenterological Association on January 1, 1943, published the first issue of a new Journal called Gastroenterology. The new Journal is owned by the Association, will be the official publication of the Association, and will be published by Williams and Wilkins Company. It will appear monthly, and the subscription price will be \$6.00 per year.

Dr. W. C. Alvarez will be the Editor (after June, 1943) and Dr. A. C. Ivy will be the Assistant Editor. The Editorial Board will consist of Doctors A. H. Aaron (Buffalo), J. A. Barger (Rochester), H. L. Bockus (Philadelphia), W. C. Boeck (Los Angeles), B. B. Crohn (New York), R. Elman (St. Louis), F. Hollander (New York), Sara Jordan (Boston), J. L. Kantor (New York), B. R. Kirklin (Rochester), P. Klemperer (New York), F. H. Lahey (Boston), F. C. Mann (Rochester), H. J. Moersch (Rochester), V. C. Myers (Cleveland), W. L. Palmer (Chicago), J. M.

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Gastroenterology invites for publication clinical and investigative contributions which are of interest to the general practitioner as well as the specialist and which deal with the diseases of digestion and nutrition, including their physiological, biochemical, pathological, parasitological, radiological, and surgical aspects.

Manuscripts should be sent to Dr. A. C. Ivy, Gastroenterology, 303 East Chicago Avenue, Chicago, Illinois. Letters regarding subscriptions and business matters should be addressed to Mr. R. S. Gill, Williams and Wilkins Company, Baltimore, Maryland.

NO EVIDENCE OF MEDICAL SERVICE BREAKDOWN

"Fears of a breakdown in American medical and public health services are unwarranted by any evidence now available," Morris Fishbein, M. D., Chicago, declares in a signed editorial in the January issue of *Hygeia, The Health Magazine*. "Far more serious," he continues, "is the attempt to create such fears as a basis for political intrigues or manipulations for political power. That is a dangerous threat to national morale and public health.

"Public attention has been focused on the health of our people by the innumerable investigations of medical manpower. Fortunately the health of our people is now the best that it has been in our history. Unless some epidemic, like that of 1918, should sweep the world, these excellent conditions should continue to prevail. Already evidence is apparent that two conditions—tuberculosis and venereal diseases—are increasing in their prevalence—greatly in other countries, somewhat in the United States. Fortunately again for us, our public health authorities and our doctors are aware of these menaces to our health; measures are already in force to curb such increases as much as possible. . . . In the great campaign against venereal diseases, the combined efforts of the military and civilian authorities and the opening of new institutions for the compulsory detention and

treatment of those who spread venereal diseases are having a most beneficial effect.

"Wars bring about movement of great numbers of people; overcrowding—difficulty in control of food and water supplies; inadequate disposal of sewage; relaxation of controls over insect and rodent pests; these and many similar factors, including shortage of drugs and various medical supplies, may predispose to the spread of diseases. The usual infections such as pneumonia, scarlet fever, diphtheria and meningitis may increase in their prevalence. Unusual conditions such as virus pneumonitis, virus conjunctivitis and various dysenteries increase in their incidence. The threat of plague, typhus, malaria and similar exotic conditions must be detected and combated. The Army and Navy Medical Departments are aware of the situation. Civilian physicians are ready to do their part. Public cooperation in utilization of medical personnel and facilities will do much to effect more efficient control.

"Even before our entrance into the world conflict, the American medical profession and the people they serve had begun a series of important experiments to secure a wide distribution of the services of the medical profession and the hospitals. Steady progress has been made by the extension of prepayment hospitalization plans to cover some fifteen million people. More than 25 per cent of state medical societies and hundreds of county medical societies are operating medical service plans for persons in low income groups. The Farm Security Administration has a plan for medical care which covers 105,000 farm families. The plan in each county has been reached by agreement between local physicians and representatives of the government. Moreover . . . the funds made available through the Social Security Act have vastly expanded public health programs in rural areas. Thus we have pro-

gressed without regimenting the people, the physicians, or the hospitals of the United States in a politically controlled bureaucracy.

"A few comments by Peter Edson, Washington correspondent of Newspaper Enterprise Association, are pertinent to the current situation on distribution of doctors. Says Mr. Edson:

"In all the screaming about doctor shortages here and there since the war got going, a lot of hypochondriacs who threw tantrums and tears into their telephones if the doc didn't dash right over have completely forgotten what the medical situation in the country was in peace times. . . . During the depression a lot of people were going without doctors because they didn't have the money to pay the bills. Now that they have more money, many are catching up with their doctoring, and that puts a further strain on doctors. Also, people weren't having babies much in the depression years. Now they are."

"Again fortunately for the United States, the American medical profession began to plan in June, 1940, for the emergency. Doctors are being rationed even more scientifically than are gasoline, fuel and tires, far more scientifically than are the members of other professions and trades. The Procurement and Assignment Service for Physicians, Dentists and Veterinarians merits the confidence and help of industrial leaders, public health and social service workers in allocating physicians in areas where there are apparent shortages."

BOOK REVIEWS

Military Medical Manuals—Manual of Dermatology. Issued under the auspices of the Committee on Medicine of the Division of Medical Sciences of the National Research Council by Donald M. Pillsbury, M. D.; Marion B. Sulzberger, M. D.; Clarence S. Livingood, M. D. Pp. 421, with 109 illustrations. Cloth. Price, \$2.00. Philadelphia: W. B. Saunders Company, 1942.

This volume is the first of the Medical Manuals, (mates of the six Surgical Manuals, three of which have already appeared, also by Saunders) that standardize the treatments to

be given in the services. Dermatology was published first because a concise, accurate text was not available elsewhere, and because, surprising as it is, skin lesions account for approximately ten per cent of the days lost through sickness. Rare and obscure diseases are not discussed; diagnostic proceedings are simple; therapeutic measures are time-tested. The text is "meaty," the illustrations excellent. An appendix contains a formulary of 82 preparations. After the war we believe this book will find a large circulation in civil practice.

New and Nonofficial Remedies, 1942, containing descriptions of the articles which stand accepted by the Council on Pharmacy and Chemistry of the American Medical Association on Jan. 1, 1942. Pp. 671. Cloth. Price, \$1.50. Chicago: American Medical Association, 1942.

Perhaps the most important feature of this new volume of New and Nonofficial Remedies is the radical rearrangement it has undergone, which it is believed will make the contents more accessible and therefore more valuable to the physician or other interested readers. Heretofore, the classification of products has been basically that of chemical relationship—the new arrangement is primarily according to therapeutic use, chemical classification being introduced by means of subheadings. In addition, the typographic style has been changed so as to give greater prominence to the products of individual manufacturers. No valuable feature has been sacrificed. The book still fulfills its function of establishing chemical standards for new and nonofficial preparations which the Council has found to be useful or to give adequate promise of usefulness in the treatment or prevention of disease. Its function as a guide to the most recent advances in therapeutics has been greatly enhanced.

Careful examination of the general discussions under the various headings and subheadings shows that the Council has admirably performed its annual task of keeping cine. The authoritative and compendious section of the sulfonamide derivatives is an outstanding example. So also is the chapter Vitamins and Vitamin Preparations for Prophylactic and Therapeutic Use. Equally im-

portant though less extensive revisions have been made in such sections as Aluminum Compounds, Dextrose, Gonadotropic Substances, Liver and Stomach Preparations, Ovaries, Parathyroid, Pituitary, and Testes.

Among the newly accepted drugs are: Acetyl-Beta-Methylcholine and the proprietary brand, Mecholyl Chloride, proposed for use by iontophoresis, orally and subcutaneously as a parasympathetic stimulant; Adrenal Cortex Extract for parenteral use in the treatment of Addison's disease or of adrenal insufficiency of other types as well as prophylactically in surgical procedures involving the adrenal cortex; Aluminum Hydroxide Gel with the proprietary brand, Creamalin, for oral use as an adjunct in the treatment of peptic (gastric and duodenal ulcer; and Normal Human Serum and Normal Human Plasma.

Others worthy of mention are: Cyclopropane, another general anesthetic, now included in the U. S. P.; Amyleaine Hydrochloride, another proprietary local anesthetic and Pernoston Sodium, the sodium salt of the previously accepted proprietary barbital derivative, Pernoston.

The indices of the new volume of New and Nonofficial Remedies are of the same order and plan as in previous editions. A general index lists accepted articles, including those not described. This is followed by an index to distributors in which appear all the Council accepted articles listed under their respective manufacturers. Finally, a bibliographical index is added for listing proprietary and unofficial articles not included in N. N. R. This includes references to the Council publications concerning each such article as has appeared in *The Journal of the A. M. A. Reports of the Council on Pharmacy and Chemistry. Propaganda for Reform, Vol. 1 and 2, or Reports of the A. M. A. Chemical Laboratory.*

Annual Reprint of the Reports of the Council on Pharmacy and Chemistry of the American Medical Association for 1941, with the comments that have appeared in the *Journal*. Pp. 187. Cloth. Price, \$1. Chicago: American Medical Association, 1942.

The Council on Pharmacy and Chemistry recently issued the thirty-third edition of the

Annual Reprint of the Reports of the Council on Pharmacy and Chemistry of the American Medical Association. This volume contains in compact form not only the reports of the Council which have been published in the *Journal* during the past year but also some additional reports which were not considered of sufficient importance to be published in *The Journal*. The reports may be divided into four classes: reports rejecting products as not being acceptable for inclusion in New and Nonofficial Remedies; reports omitting from New and Nonofficial Remedies products that have previously been accepted; reports on the nomenclature of various substances; and reports in which the Council gives decisions of general interest or summarizes the latest scientific knowledge concerning certain topics. The last classification includes the largest number of reports. One article deals with the developments in bacteriophage therapy since the previous report of the Council in 1934. Other reports bring to the present day the status of such products as aluminum hydroxide preparations, antipneumococcic serums, cyclopropane, human blood plasma and serum, human convalescent poliomyelitis serum, human convalescent mumps serum and sulfadiazine. Such topics as ion transfer (iontophoresis), halogenated vegetable oils for bronchography and the problem of lipid pneumonia and the sympathomimetic amines as epinephrine substitutes are discussed. The nomenclature reports deal for the most part with the Council's adoption of nonproprietary designations for comparatively new products such as diethylstilbestrol, menadione, and sulfadiazine. Explanations are given for the omission at this time of products which have previously been included in New and Nonofficial Remedies. In most cases the N. N. R. description is included in the report as a matter of record. The volume also includes the reports rejecting various products, which have either been submitted by the manufacturer or considered on the Council's own initiative, and which have been found not acceptable for inclusion in New and Nonofficial Remedies. Also incorporated is a brief summary of the decisions arrived at by the Council at its last meeting.

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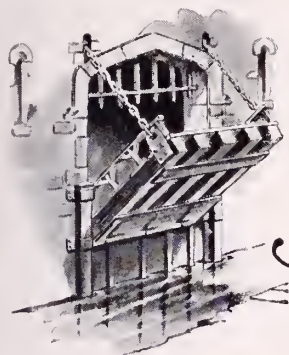
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A bambino from the Foundling Hospital, Florence, Italy,—A. della Robbia

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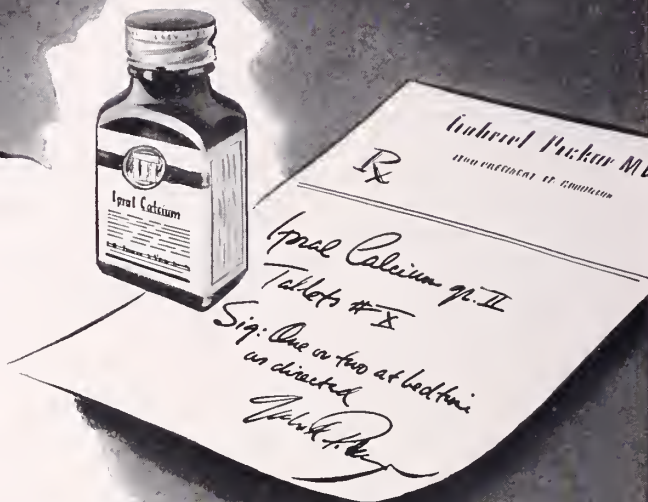
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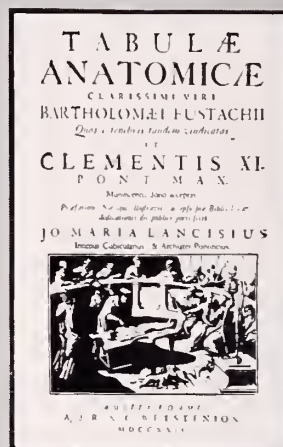
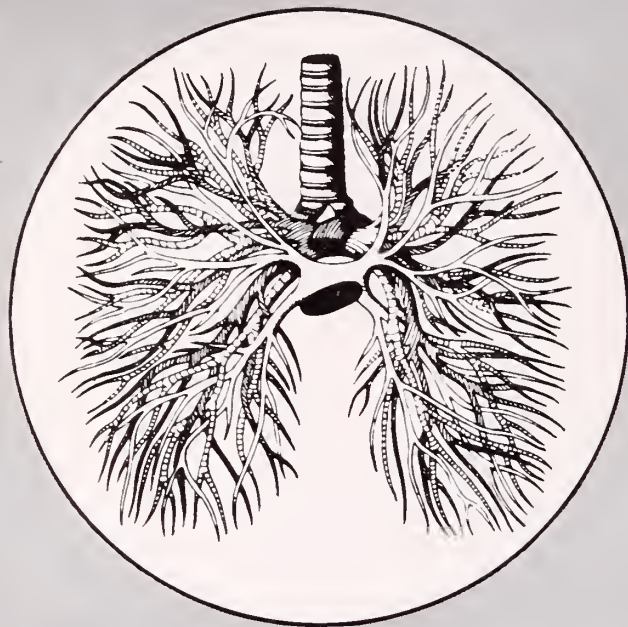
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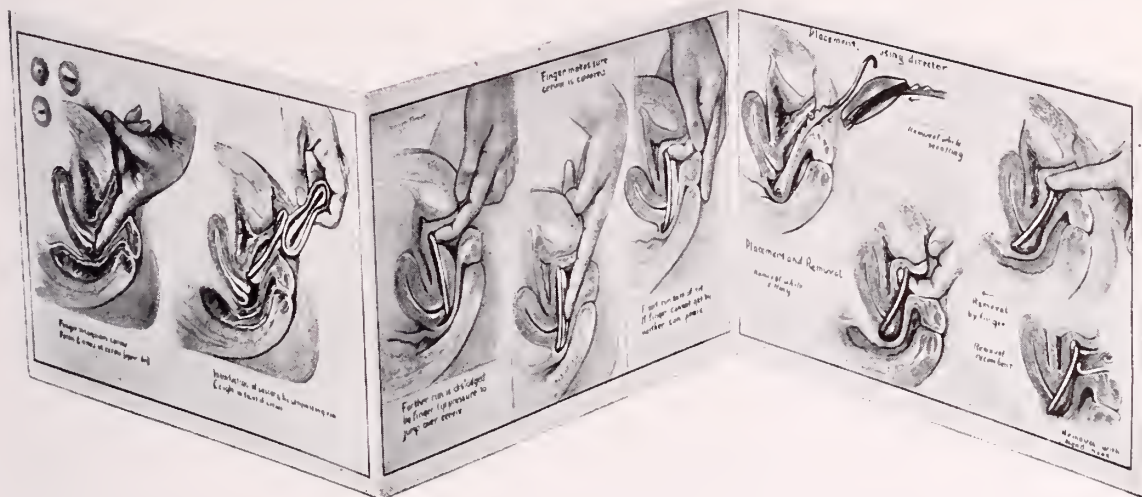
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MEDICAL CONTROL OF INDUSTRIAL EXPOSURE TO TOXIC CHEMICALS

JOHN H. FOULGER, M. D.*

Wilmington, Del.

THE FUNCTION OF THE INDUSTRIAL PHYSICIAN

The major function of the physician in industry is prevention, not diagnosis. Where there is a hazard to health from chemicals (and in these days this may be present in almost all industries), the physician must prevent not only spectacular cases of poisoning, but also less obvious conditions of depreciated health. Contrary to impressions often given by the literature of industrial toxicology, the major loss of time and efficiency (and, therefore, economic loss to both worker and employer) does not result from definite poisoning. It comes from many cases of a degree of impairment of health which may be unrecognized as to type or origin. Often these are classed by the family physician as "neuro-circulatory asthenia," "nervous indigestion" and so on. The most valuable work of the industrial physician lies in this borderline field. Thus, his total preventive function can best be expressed as "Maintenance of Good Health Under All Circumstances."

THE SCIENTIFIC BASIS OF PREVENTIVE INDUSTRIAL MEDICINE

Prevention is harder than diagnosis. It cannot be based successfully upon the type of information and laboratory tests used in diagnosis. It must be founded on a fund of practical physiological knowledge, which allows the early detection of even slight departure from the usual. Since the changes which must be noted are far less tangible than those present in frank poisoning, a program of preventive medicine must be even more systematic than one of diagnosis. It must include not only the examination of each employe on application for a job but also periodic study when at the job.

* Director, Haskell Laboratory of Industrial Toxicology, E. I. duPont de Nemours & Company.

THE PREEMPLOYMENT EXAMINATION

When he applies for employment, each worker should be given a comprehensive medical examination. The sole purpose of this examination is *selective*. By it, workers can be classified according to their physical ability to fulfill the duties of the jobs to which they are to be assigned and to withstand the health hazards, which may be involved.

The selective examination must be based on a detailed knowledge of the work done in each part of the plant. Where hazards from chemicals may exist, the examining physician must know all that he possibly can about them, and should classify them in some manner so that he may properly locate his workers. A physician who only examines, and does not make himself intimately acquainted with operations in his plant, is not an industrial physician. He is merely an examiner.

Because, in the practice of industrial preventive medicine, the medical study of the worker extends beyond the initial selective examination, that examination must contain all the procedures which may later be used in periodic checks.

PERIODIC EXAMINATION

The practice of selecting employes by a pre-employment examination and then studying them only when they are sick or are discharged is futile. Even the program of annual checkup examinations, while a great advance over a mere preemployment examination, is woefully inadequate for the proper control of health in industries using chemicals. There must be a program of periodic re-examinations, varying in frequency according to the degree of health hazard in different occupations.

FUNDAMENTAL INFORMATION REQUIRED FOR SELECTIVE AND PERIODIC EXAMINATIONS

Since the purpose of both selective and periodic examinations is to prevent the worker from being injured by his work, both must be based on proper information about

the hazards of that work. In the term, "proper information," lies the key to successful preventive medicine in industry. The literature on industrial toxicology is voluminous, but suffers from important defects. It deals almost exclusively with the clinical history and pathology of pronounced cases of human poisoning or of experimental poisoning of small laboratory animals. It necessarily covers only a limited number of industrial chemicals and tends to emphasize specificities in their action. Thus it fails to give information of use in hazards due to new chemicals.

The physician in industries using chemicals must remember that any chemical can be a source of injury if used carelessly or without proper information, but that with proper information and proper care, any chemical can be manufactured and used with minimal injury to health, no matter how potentially harmful it may be.

It is usual to divide cases of chemical injury into two major classes—acute and chronic. Acute poisoning appears within a few minutes, hours, or days of exposure to a very active concentration of a toxic chemical. Chronic poisoning develops slowly during months or years of exposure to low concentrations of a toxic chemical or at least to concentrations which are not immediately highly effective.

Existing literature on industrial toxicology overemphasizes acute poisoning. This leads some to believe that unless a chemical quickly causes obvious injury or death, it is not to be feared. No conclusion could be more erroneous. The loss of time and efficiency in industry, from cases of acute poisoning is relatively insignificant if compared with losses due to undetected or unrecognized effects of prolonged exposure to such concentrations of chemicals as never cause acute poisoning.

Acute poisoning usually results from accident or carelessness. Accidents follow a breakdown of physical equipment, temporary inadequacy of personnel, or carelessness. The breakdown of physical equipment may be the result of initial faulty construction, poor maintenance, improper operation, or, again, carelessness. Construction, maintenance and

operation problems lie in the field of the engineer and chemical engineer. The physician, as physician, has here no function other than diagnosis and treatment of the results of accidents.

By temporary inadequacy of personnel, we mean the failure of usually competent workers to perform their duties when this failure is definitely not due to ordinary carelessness. Accidents originating in such failure may be very serious, involving more than the defective worker, and quite frequently leading to important damage to material and equipment. We may suggest, as examples, some of the major accidents in war explosives industries. Little study has been made of this temporary inadequacy. There is good reason to suggest that it may be due sometimes to the undetected effects of chronic exposure to chemicals.

Proper information for diagnosis and treatment of acute poisoning comprises that mass of clinical knowledge used in any case of sickness. Apart from occasional specific antidotes which may hinder or prevent absorption of poisons taken orally, the principles of diagnosis and treatment are the same as for any illness. It is not absolutely necessary to know the cause of injury to find which organs are affected. A knowledge of the specific action of some chemicals may help in selecting the best (that is, the safest and most rapid) means of eliminating them from the system, and allow the physician to foresee possible complications; but the poisoned patient can be treated successfully even if the cause of his condition is not known. This is fortunate because the literature of toxicology, voluminous as it is, covers only a few of the chemicals used in industry and could never keep pace with the rate with which new ones are produced. In these days of chemotherapy one warning is in order. When treating a case of chemical poisoning, be sure that your therapy does not further injure the patient. The reasons for this warning will be apparent later.

Chronic poisoning, by definition, does not develop rapidly and, therefore, cannot be ascribed to accident. It may result from an initial defective construction of physical equipment, or from defects due to the inevi-

table forces of aging, or to improper operation. Probably, however, most chronic poisonings may be ascribed to the practical impossibility of preventing all contact of worker with chemical. This is particularly the case when a toxic substance can be absorbed through the skin, a route of exposure which is much more common than is usually suspected.

Since, in chronic poisoning, months or years may be involved in slow development of injury before the victim is recognized clinically as sick, there may be no definite point at which the physician can be advised to apply his diagnostic skill. The major function of the physician here is prevention, not diagnosis, and, therefore, it is important that his proper information is such as to allow of detecting the least departure of the worker from his normal physical condition.

The literature of industrial toxicology is specifically defective in adequate information for a program for prevention of chronic poisoning. There has been a lack of opportunity for close, continuous observation of workers. The detection of slight departures from normal health and their trend cannot be made by the usual laboratory tests or procedures of pathology. Controlled experiments on small animals are of little value unless a detailed study of physiology on the intact animal is carried out.

Close medical observation of workers exposed to chemicals has been difficult because the methods used must conform to certain rigid criteria. Industry aims at making goods, not medical records. Any examination of workers requires absence from the job. The type of examination used must, therefore, be simple, not involving much loss of time or the use of techniques such as blood sampling, which might reduce the efficiency of the worker, or lead to personal objections. To give the maximum information with least time loss, data must be obtained as measurements not opinions, and so recorded as to be susceptible to statistical analysis. In the interest of scientific economy, the procedure of examination should be applicable to at least the majority of chemical exposures now existing, and to at least a majority of those which might result from introduction of new substances into in-

dustry. The changes from normal which the examination measures and records must, therefore, not be specific, but rather those produced by a majority of chemicals in concentrations having a low degree of physiological activity.

No success has attended efforts to base a general picture of physiological action upon gross or minor details of chemical structure. The numerical values of many physical properties can be calculated arithmetically from indices for active chemical groups or nuclei. Therefore, such physical properties are also useless in formulating a general picture.

In view of the special requirements of medical examinations used in control of industrial exposure to toxic chemicals, and in the absence of a basis for a general theory derived from chemical structure or physical properties, it is best to discard all considerations of such structure and properties and to concentrate attention upon the first response of humans or experimental animals when foreign substances are absorbed by any route, and especially through the respiratory and alimentary tracts or through the skin.

THE EARLY EFFECTS OF ABSORPTION OF TOXIC CHEMICALS

Nearly five years of study of animals and men exposed to a wide variety of toxic chemicals has enabled us to set up a relatively simple program for prevention of ill health. It is a program of medical control which is not time-consuming, and requires no complicated apparatus. It applies to large and small plants and, indeed, is adapted most easily to small plants. It can be used to study exposures to chemicals of known toxicity and to detect and follow the activity of new chemicals. The details of this scheme and results of the application are described below.

The earliest detectable action of toxic chemicals which, when absorbed into the body by any route, have a systemic, as opposed to a purely local effect, is not specific. It does not depend, except in intensity and rate of onset, upon the chemical structure or obvious physical properties of the compound involved. This early action is due to changes in the metabolism of individual tissue cells and can be described in crude terms as interference with the oxidation-reduction processes in those

feeling in the same way. No two can give the examiner the same impression of the intensity of feeling. Further, many factors affect the degree of frankness of a worker in describing his symptoms. Symptoms should be entered on examination records, but since they cannot be expressed numerically, they are of minor value in a practical program of preventive medicine.

The signs of the early action of toxic chemicals are also limited and most require special equipment for detection. Fortunately one sign is easily measured. This is a change of blood pressure from the usual level. At first the change may be slight, but later it is so great as to give blood pressure readings which are far from the usual.

Much clinical information on blood pressure comes from the study of people who are obviously sick or from isolated examinations of applicants for life insurance policies. The results of such studies are misleading. They suggest a great variability of pressure which we have not found in frequent routine examinations of workers. Many records, obtained from hundreds of workers by examinations made as often as twice a month for five years, show that the blood pressure of a given individual remains within rather narrow limits so long as he is not affected by such factors as disease, malnutrition or toxic chemicals. The usual clinical studies of blood pressure show a general upward trend of values with age, and it is implied that chronological age alone is a determining factor. But the term, "age," holds the possibility of action of such important agents as disease, change in economic status with resultant psychic effects, change in nutrition, etc. Our accumulated data on blood pressure does not indicate that age, per se, plays a vitally important part in determining the pressure level. It is certainly subordinate to disease, malnutrition and exposure to chemicals.

Early exposure to low concentrations of chemicals just adequate to have physiological action tends to cause a rise in diastolic blood pressure. Special studies indicate that this is the result of a stimulation which increases the tonus of the muscle of the arterial walls and that property which corresponds to tonus in the heart muscle itself. With continued low grade exposure, the rise in diastolic

blood pressure may go on until definitely abnormal levels are reached, and these may become fixed.

With the rise of diastolic pressure there is not, at first, an appreciable change in systolic pressure. Therefore, pulse pressure gradually diminishes, and may reach abnormally low values.

When the diastolic blood pressure has risen and become fixed at abnormal levels, the systolic pressure often begins to rise and eventually both systolic and diastolic hypertension are attained and may persist. But abnormally high systolic pressure is definitely not one of the signs of early exposure to toxic chemicals.

Higher concentrations of the same chemical act as a depressant and lead to a fall in systolic and diastolic blood pressure. These two factors may not fall at the same rate so that pulse pressure may change. Eventually, both systolic and diastolic pressure attain abnormally low levels. Usually the systolic pressure is the first to become abnormal. One may often see cases in which all three blood pressure components—systolic, pulse and diastolic pressures—are very low. This depressant phase of the action of chemicals can

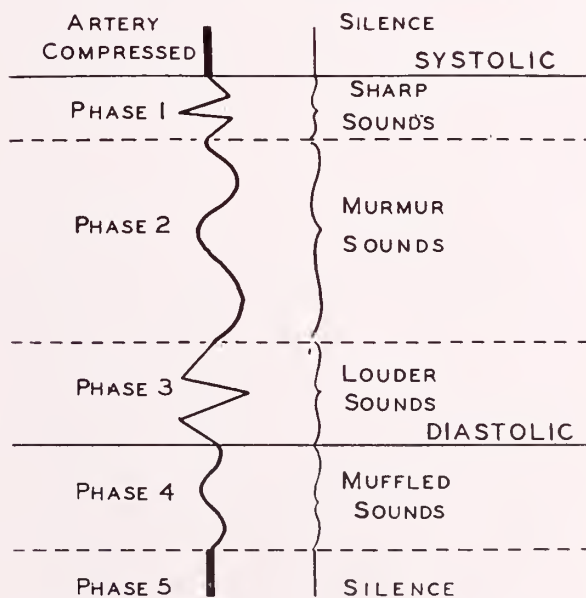


Diagram of sound phases in measurement of blood pressure, from Robert Sauthby, *Medical Journal of Australia*, 2: 569, 1935.

lead to circulatory collapse, as a result of marked diminution in muscle tonus and a failure of the venous blood to return in adequate quantity to the right side of the heart,

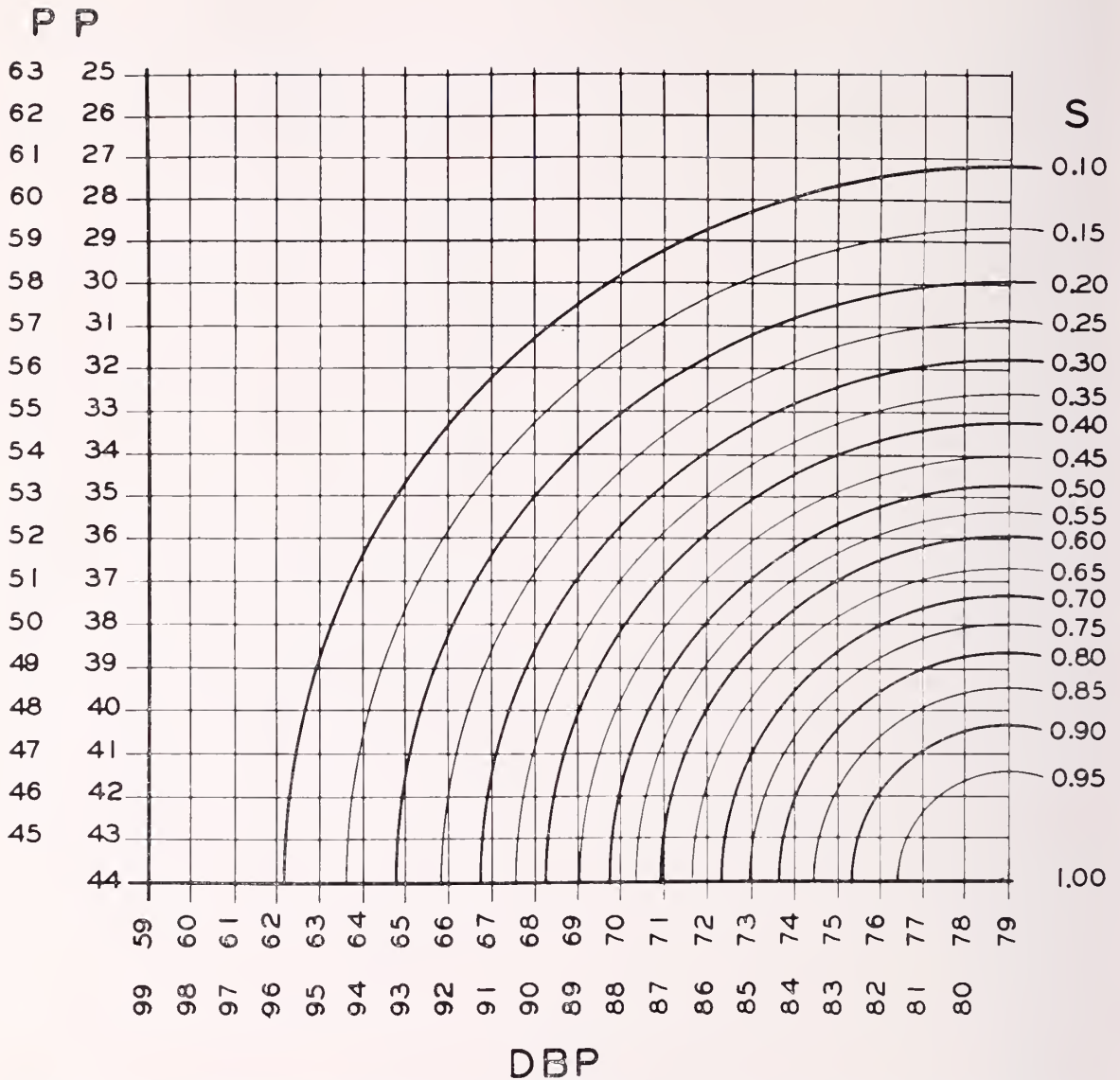


FIG. 2—Chart for calculation of score for diastolic and pulse pressure readings. Read the diastolic blood pressure on the horizontal axis and the pulse pressure on the vertical axis. Find the intersection of these two and estimate the score from the nearest quadrant to this intersection, reading the scores at the right-hand end of the end of the quadrant under the letter S.

thus decreasing the ability of the circulatory system to compensate for changes in posture.

These changes in blood pressure, even the most drastic, appear before any tissue is irreversibly injured. They are purely functional in origin, but if the exposure which causes them is allowed to persist definite organic injury may follow—the typical textbook picture of poisoning.

MEASUREMENT OF BLOOD PRESSURE

Blood pressure measurements can be used in a program of preventive medicine only if they are properly made and recorded, and

are studied by a procedure which allows one to follow trends.

In our work we find it best to measure the blood pressure with the patient sitting, employing the technic recommended by the Joint Committee of the American Heart Association and the Cardiac Society of Great Britain and Ireland, (1) with certain additions mentioned below. Before any measurement is made, the patient must have been sitting quietly for at least five minutes, without smoking. This allows the circulatory system to become stable after the exertion necessary

in going from the place of work to the plant physician's office.

We measure the pressure on both arms. In changing the sphygmomanometer cuff from one arm to the other, the worker should not get up, or move rapidly to assume a comfortable position. He should move slowly; otherwise, he destroys the stability produced by the five minutes of rest.

We measure and record routinely the diastolic pressure on both arms, at 4th and 5th phases (i. e., change of sound and disappearance of sound), and all pressure measurements are entered on the record at the actual level shown by the manometer (usually to each 2 mm.)—not at the nearest 5 to 10 mm. There is no gesture more useless, even for "the record," than a measurement of blood pressure recorded to the nearest 10 mm.

The measurement on both arms and at both readings of diastolic pressure is not ordinary clinical practice, but in preventive medicine in industry we find it valuable, since experience shows that one of the earliest signs of physiological action of chemicals may be an abnormal difference between systolic or diastolic pressures of the two arms, or between the two levels of diastolic pressure on one or both arms.

USEFUL LEVELS OF BLOOD PRESSURE

In repeated surveys of medical records, we find that the occurrence of readings *outside* the following arbitrary "normal" limits in individuals selected by preemployment examination give indications of chemical exposure or other factors mentioned later. These levels are also useful in quick estimates of the significance of the preemployment examination, itself.

"NORMAL" PRESSURE LIMITS

Systolic Pressure		100 - 149 mm.
Diastolic		65 - 89 mm.
Pulse Pressure		30 - 58 mm.
Difference between two arms:		
Systolic Pressure		0 - 20 mm.
Diastolic Pressure		0 - 10 mm.
Difference between 4th and fifth phase dias- tolic pressure, either arm		
		0 - 10 mm.

SCORES OF BLOOD PRESSURE

The use of such arbitrary levels, however, gives little information on trends and less on

the actual condition of the circulation as a whole. For this reason we have developed a system which gives a score to each blood pressure reading according to the distance of pulse pressure and diastolic pressure from the respective means derived from a study of many records.

Mathematically, it is expressed by the formula:

$$\ln S = -0.00339 (x^2 + y^2)$$

where

S = Score

$\ln S$ = Logarithm of S to the base 10.

x = Deviation of diastolic blood pressure from an established mean of 79 mm.

y = Deviation of the pulse pressure from an established mean of 44 mm.

The nomograph (Fig. 2) allows of easy reading of the score for any level of diastolic and pulse pressure.

In this system, the established mean for diastolic pressure is 79 mm. and that for pulse pressure is 44 mm. Readings at these exact measurements are given values of 1.0. Other readings are given values less than 1.0 decreasing the further we pass away from the means. Thus, a diastolic pressure of 89 mm. and one of 69 mm. have the same score, and a pulse pressure of 35 mm. has the same score as one of 53 mm. Finally, we combine these two components into a complete score which is the product of individual pulse pressure and diastolic pressure scores. This is done because these two factors completely define any blood pressure measurement. But while both diastolic pressure and pulse pressure must have real values during life, there is no simple correlation between their values. Therefore, they can be considered as independent events, occurring simultaneously. Since the mathematical derivation of the individual score for each component is, to some extent, a measure of its probability of occurrence, the final score used is the product of the individual scores.

In using this scoring system, we calculate the score from the arithmetic average of readings for the two arms. We use the measurement of diastolic pressure at the 4th phase (change of sound) in calculating the

score, except in special cases in which a chemical can easily produce circulatory collapse (e. g., nitrites). In these special cases we use the 5th phase reading.

After much study of this scoring system we have come to consider scores between 0.11 and 0.20 as of doubtful normality, and scores of 0.10 or less as definitely abnormal.

It has been pointed out that the selective examination given a worker when he applies for employment should contain the criteria to be used in periodic checks to be made during employment. Therefore, the comprehensive selective examination should contain the described blood pressure measurements, and when the worker is to be exposed to a toxic chemical his blood pressure score should be greater than 0.10 (preferably 0.20 or higher). In applying this criterion, however, one situation must be remembered. When a worker applies for a job he is already under psychic pressure. He is obviously needing a job or he would not bother to apply. The extent of his need may be great. Often, he has not received a medical examination before—or at least not so comprehensive an examination as is given by many industrial medical divisions. To him the procedures required may appear almost as a personal affront and so still further increase his apprehension. Under such conditions many people show an unusually high systolic pressure with a normal diastolic pressure. As a result, the pulse pressure may be an index of psychic instability. It can be disregarded unless the worker is to be employed in a job requiring great stability, or exposure to a chemical affecting the central nervous system. But the recurrence of an abnormal score due solely to high pulse pressure (i. e., with normal diastolic pressure) during periodic examinations should be a matter for careful inquiry. (A study of the reasons for occurrence of such abnormal scores among work groups can be interesting. Thus, it has been found that a new foreman, in his efforts to increase or improve production—and, incidentally, justify his promotion—can so disturb young workers that a whole “flock” of abnormal scores, due solely to psychic causes, may result. The present war with its accompanying prospects of being drafted into the Army, has produced similar results.)

REGISTRATION OF BLOOD PRESSURE SCORE AND ANALYSIS OF RESULTS

No program of periodic examination is of any value unless its results are properly registered and frequently studied. Study is most efficient if it is made on a statistical basis. The best form of registration is one in which pertinent data is collected together and so can be analyzed easily. The less pertinent data can be obtained when necessary by reference to the original examination record.

For ordinary purposes the pertinent data includes names of workers in a given group, the dates of examination (by months, usually), and the results of blood pressure scoring. Fig. 3 gives a facsimile page of a group register, the data employed in analysis and, at the bottom, summarized results of the analysis. The page illustrated contains headings for the groups, space for names of individuals, and opposite the latter, columns for entry of results by months (or any other convenient time unit). Each of these columns is divided into one large and two smaller columns. The large column is for entry of blood pressure scores as normal, N; or doubtful, D (i. e., 0.20 to 0.11); or abnormal, A (i. e., 0.10 or less). The narrow column headed, T, is for the total of abnormal and all examinations, entered as the fraction.

N. Abnormal

Total

obtained in the time interval of study (e. g., one month). The column marked “C” is for the cumulative total of abnormal and all examinations obtained by adding the total for the particular month (or other time interval) under study to the total of all preceding examinations since the group study was commenced. This cumulative total is also entered as a fraction. The meaning of the summary portion of the page will be given later.

In describing the purpose of the initial selective medical examination, it was pointed out that *the plant physician should know his plant and be able to classify the various health hazards so that he can properly allocate workers.* An effective preventive medical program requests that he make a proper survey of his plant. Such a survey can be based upon blood pressure readings and

YEAR
OCCUPATION

NAME	JAN		FEB		MAR		APR		MAY		JUNE	
		TC		TC		TC		TC		TC		TC
W J	N A A *	$\frac{2}{3}$ $\frac{3}{3}$	A ~ *	$\frac{1}{2}$ $\frac{2}{2}$	N ~ ~ *	$\frac{1}{2}$ $\frac{1}{2}$	N ~ ~ *	$\frac{1}{2}$ $\frac{1}{2}$				
J B	N N	$\frac{0}{2}$ $\frac{0}{2}$	N ~	$\frac{0}{2}$ $\frac{0}{2}$	N A	$\frac{0}{2}$ $\frac{0}{2}$	N A	$\frac{1}{2}$ $\frac{1}{2}$				
W J	N A	$\frac{1}{2}$ $\frac{1}{2}$	N ~	$\frac{0}{2}$ $\frac{1}{4}$	N ~ ~	$\frac{0}{2}$ $\frac{1}{2}$	N ~	$\frac{0}{2}$ $\frac{1}{4}$				
B G	N N N	$\frac{0}{8}$ $\frac{0}{1}$	N N A	$\frac{1}{6}$ $\frac{1}{6}$	A ~ ~	$\frac{1}{6}$ $\frac{1}{4}$	N ~ A *	$\frac{1}{3}$ $\frac{1}{6}$				
H B	N N	$\frac{0}{2}$ $\frac{0}{2}$	N ~	$\frac{0}{2}$ $\frac{0}{2}$	N	$\frac{0}{2}$ $\frac{0}{2}$	N ~	$\frac{0}{2}$ $\frac{0}{2}$				
B J	N N	$\frac{0}{2}$ $\frac{0}{2}$	N A	$\frac{1}{2}$ $\frac{1}{2}$	N ~	$\frac{0}{2}$ $\frac{0}{2}$	N	$\frac{0}{2}$ $\frac{1}{2}$				
B N	A N	$\frac{1}{2}$ $\frac{1}{2}$	N ~	$\frac{0}{2}$ $\frac{1}{4}$	N ~	$\frac{0}{2}$ $\frac{1}{2}$	N A	$\frac{1}{2}$ $\frac{1}{2}$				
E C	N N	$\frac{0}{2}$ $\frac{0}{2}$	N ~	$\frac{0}{2}$ $\frac{0}{2}$	A A *	$\frac{1}{2}$ $\frac{1}{2}$	N ~ ~	$\frac{1}{2}$ $\frac{1}{4}$				
Z C			N ~	$\frac{0}{2}$ $\frac{0}{2}$	N N A	$\frac{1}{3}$ $\frac{1}{3}$	N ~	$\frac{0}{2}$ $\frac{1}{2}$				
T W	N N N	$\frac{0}{3}$ $\frac{0}{3}$	N A A *	$\frac{1}{3}$ $\frac{2}{6}$	N ~ ~	$\frac{0}{2}$ $\frac{1}{4}$	N A A *	$\frac{2}{3}$ $\frac{1}{2}$				
J G	N N	$\frac{0}{2}$ $\frac{0}{2}$	N	$\frac{0}{2}$ $\frac{0}{2}$	N ~	$\frac{0}{2}$ $\frac{0}{2}$	N ~	$\frac{0}{2}$ $\frac{0}{2}$				
W F	N N	$\frac{0}{2}$ $\frac{0}{2}$	N ~	$\frac{0}{2}$ $\frac{0}{4}$	N ~	$\frac{1}{2}$ $\frac{0}{2}$	N ~	$\frac{0}{2}$ $\frac{0}{2}$				
A F	A	$\frac{1}{1}$ $\frac{1}{1}$	A ~ ~ *	$\frac{1}{3}$ $\frac{2}{4}$	N ~ ~	$\frac{0}{2}$ $\frac{1}{4}$	N A *	$\frac{1}{2}$ $\frac{1}{4}$				
G R	N A	$\frac{1}{2}$ $\frac{1}{2}$	N ~	$\frac{0}{2}$ $\frac{1}{4}$	A A *	$\frac{1}{2}$ $\frac{1}{2}$	N ~ ~	$\frac{1}{2}$ $\frac{1}{2}$				
H S	N N	$\frac{0}{2}$ $\frac{0}{2}$	N ~	$\frac{0}{2}$ $\frac{0}{4}$	N ~	$\frac{0}{2}$ $\frac{0}{2}$	N A ~	$\frac{1}{3}$ $\frac{1}{4}$				
S V	N A	$\frac{1}{2}$ $\frac{1}{2}$	A ~ ~ *	$\frac{1}{3}$ $\frac{1}{5}$	N ~ ~	$\frac{0}{2}$ $\frac{1}{2}$	N ~	$\frac{0}{2}$ $\frac{1}{2}$				
C A	N A A *	$\frac{2}{3}$ $\frac{2}{3}$	N A ~ *	$\frac{1}{3}$ $\frac{1}{6}$	N A ~ ~	$\frac{1}{3}$ $\frac{1}{4}$	N ~ ~ *	$\frac{0}{2}$ $\frac{1}{2}$				
W A	N N	$\frac{0}{2}$ $\frac{0}{2}$	N	$\frac{0}{2}$ $\frac{0}{2}$	N ~	$\frac{0}{2}$ $\frac{0}{2}$	N	$\frac{0}{2}$ $\frac{0}{2}$				
C J	N N	$\frac{0}{2}$ $\frac{0}{2}$	N ~	$\frac{0}{2}$ $\frac{0}{4}$	N ~	$\frac{0}{2}$ $\frac{0}{2}$	N A	$\frac{1}{2}$ $\frac{1}{2}$				
J M					N A A *	$\frac{1}{3}$ $\frac{1}{3}$	N A ~	$\frac{1}{6}$ $\frac{1}{2}$				
J F	N	$\frac{0}{1}$ $\frac{0}{1}$	N A ~	$\frac{1}{2}$ $\frac{1}{4}$	N ~	$\frac{0}{2}$ $\frac{1}{2}$	N	$\frac{0}{2}$ $\frac{1}{2}$				
A R	N A	$\frac{1}{2}$ $\frac{1}{2}$	N ~	$\frac{0}{2}$ $\frac{1}{4}$	N ~ ~	$\frac{1}{2}$ $\frac{1}{2}$	N ~	$\frac{0}{2}$ $\frac{1}{2}$				
H P	N N	$\frac{0}{2}$ $\frac{0}{2}$	N ~	$\frac{0}{2}$ $\frac{0}{4}$	N	$\frac{1}{2}$ $\frac{0}{2}$	N ~	$\frac{1}{2}$ $\frac{0}{2}$				
C A	N N	$\frac{0}{2}$ $\frac{0}{2}$	N ~	$\frac{0}{2}$ $\frac{0}{4}$	N	$\frac{0}{2}$ $\frac{0}{2}$	N ~	$\frac{0}{2}$ $\frac{0}{2}$				
L J	N ~ ~	$\frac{0}{2}$ $\frac{0}{2}$	N ~	$\frac{0}{2}$ $\frac{0}{2}$	N A ~	$\frac{1}{3}$ $\frac{1}{2}$	N A	$\frac{1}{2}$ $\frac{1}{2}$				
B K					N ~	$\frac{0}{2}$ $\frac{0}{2}$	N ~ ~	$\frac{1}{3}$ $\frac{1}{2}$				

TOTAL MEN	23			24			26			26		
CHR. AB. MEN	2			5			6			8		
EX. ALL GP.		$\frac{10}{41}$ $\frac{10}{41}$			$\frac{9}{62}$ $\frac{19}{101}$			$\frac{12}{59}$ $\frac{31}{160}$		$\frac{15}{57}$ $\frac{23}{217}$		
EX. N-C. GP.		$\frac{6}{43}$ $\frac{6}{43}$			$\frac{3}{35}$ $\frac{2}{75}$			$\frac{4}{48}$ $\frac{15}{102}$		$\frac{6}{35}$ $\frac{11}{133}$		
RATIOS ^{OBS} / _{EXP} AB												
C. MEN	0.67			1.67			1.80			2.00		
ALL EX.		1.67 1.67			1.50 1.73			1.71 1.94		1.71 2.45		
EX. N-C. GP.		1.00 1.00			0.60 0.77			0.67 1.25		1.20 1.21		

FIG. 3—Form of group registration of blood pressure examination results for statistical analysis.

scores. Except when the plant is new, it need not be a mass survey. It can be made up of smaller surveys each of an occupation area. A fair idea of the general spread of hazard among occupations can be obtained from annual medical examinations, scoring the blood pressure measurements, provided that too many changes in equipment and processes have not occurred since those examinations were made.

FREQUENCY OF OCCURRENCE OF ABNORMAL EXAMINATIONS

The survey of degrees of hazard requires a yardstick of the frequency of occurrence of abnormal blood pressure scores.

Experience has shown that

(a) a worker selected initially as having a blood pressure score above 0.10, when subsequently examined a very large number of times, will not show a score of 0.10 or less as a result of chance alone (i. e., as a result of unexplainable causes) in more than 6% of all his examinations;

(b) a very large group of workers, initially selected as having normal blood pressure scores, when again examined once will not show 0.10 or less in more than 6% of all scores as a result of chance alone; and

(c) in a very large number of re-examinations on more than one worker, each worker being selected initially as having a score above 0.10, chance alone will not give more than 6% of all examinations with scores of 0.10 or less.

Since it is impossible at any given time to make a "very large number" of examinations in the statistical sense, the 6% figure must not be considered as applying to all groups of examinations. One must, in practice, use the mathematics of random sampling, arguing as follows:

Suppose a large bowl were to contain one million balls, all of one size but not thoroughly mixed. Six per cent of these balls (60,000) are black and the rest white. If, with a scoop, a random sample of 10,000 balls were taken out and found to contain 900 black balls, one should not reach the erroneous conclusion that 9% of all the million balls were black. If the random sample contained only 50 balls, it is quite possible that 6 of these

are black, but one must not conclude that 12% of all balls in the bowl are black. (This is a common error in conclusions drawn from so-called statistics of clinical cases, when the incidence of deaths or cures is expressed as percentage.) It is possible to calculate the maximum number of black balls to be expected in a random sample of any size. The smaller the sample the more this maximum will depart from the overall 6%.

In using the 6% yardstick to study the frequency of occurrence of blood pressure scores of 0.10 or less in groups of examinations, we take into account the fact that any ordinary group of examinations is not statistically "very large," and use a figure for the maximum number of abnormal examinations expected by chance alone in a group of the size under study. Table 1 gives values to the nearest whole number for this maximum expected number of abnormals, calculated from the formula

$$Y = 0.06 N + 2 \sqrt{pqN}$$

in which

$p = 0.94$ (the probability of occurrence of normal examinations in a large group).

$q = 0.06$ (the probability of occurrence of abnormal examinations in a large population).

$N =$ the number of examinations in the group.

To save space the group sizes are entered to the nearest 5. Thus, the expected number of abnormals for a group of 28 to 32 would be read as for a group of 30. For a group of 27 it would be read as for 25 and for a group of 33, read as for 35.

ABNORMALITIES INDEX R .

A useful index is obtained by calculating the ratio

$$\frac{\text{OBSERVED NUMBER OF ABNORMAL SCORES}}{\text{MAXIMUM EXPECTED NUMBER}}$$

for any given examination group. This we prefer to term the "abnormality index" and give the symbol " R ".

Normally, this index should not exceed a value of 1.0. When it is greater than 1.0, the group under study contains too many abnor-

mal blood pressure scores. This is evidence, in our survey, of industrial exposure to toxic chemicals (or an unusual epidemic of disease, results of mass celebrations, or widespread malnutrition).

THE PLANT SURVEY

To make the preliminary plant survey, collect the most recent examinations, one for each worker. Score the blood pressure readings and then break down the results into plant areas and occupation groups. The type of results obtained is shown in Table 2. In this table, the various items are given initials as follows:

- S = total number of examinations in group studied
- A = number with blood pressure scores 0.10 or less
- B = maximum number of abnormals expected by chance alone in group of size S (Table 1)

TABLE 1

Total Exams.	0 Max. Ab.	5 Ex-pected	Total Exams.	0 Max. Ab.	5 Ex-pected	Total Exams.	0 Max. Ab.	5 Ex-pected
600	47	48	800	61	62	1000	75	75
10	48	49	10	62	62	10	76	76
20	49	49	20	63	63	20	76	77
30	50	50	30	63	64	30	77	77
40	50	51	40	64	65	40	78	78
50	51	51	50	65	65	50	78	79
60	52	52	60	66	66	60	79	79
70	52	53	70	66	67	70	80	80
80	53	54	80	67	67	80	80	81
90	54	54	90	68	68	90	81	81
700	55	55	900	68	69	1100	82	82
10	55	56	10	69	69	10	82	83
20	56	56	20	70	70	20	83	83
30	57	57	30	70	71	30	84	84
40	57	58	40	71	71	40	84	85
50	58	58	50	72	72	50	85	85
60	59	59	60	72	73	60	86	86
70	59	60	70	73	73	70	86	87
80	60	60	80	74	74	80	87	87
90	61	61	90	74	75	90	88	88
						1200	88	...

To obtain plant or group score:

- Count (A) Total number of examinations;
- (B) Number of examinations with Pulse Pressure-Diastolic Pressure Score 0.10 or less;

Divide (B) by value of Max. Ab. Expected, given in table.

Score above 1.00 indicates too many abnormal examinations.

TABLE 1

Total Exams.	0 Max. Ab.	5 Ex-pected	Total Exams.	0 Max. Ab.	5 Ex-pected	Total Exams.	0 Max. Ab.	5 Ex-pected
1	1	1	200	19	19	400	33	34
10	2	3	10	19	20	10	34	34
20	3	4	20	20	21	20	35	35
30	4	5	30	21	21	30	36	36
40	5	6	40	22	22	40	36	37
50	6	7	50	22	23	50	37	37
60	7	8	60	23	24	60	38	38
70	8	9	70	24	24	70	38	39
80	9	9	80	25	25	80	39	39
90	10	10	90	25	26	90	40	40
100	11	11	300	26	26	500	40	41
10	12	12	10	27	27	10	41	42
20	12	13	20	28	28	20	42	42
30	13	14	30	28	29	30	43	43
40	14	14	40	29	29	40	43	44
50	15	15	50	30	30	50	44	44
60	16	16	60	30	31	60	45	45
70	16	17	70	31	32	70	45	46
80	17	17	80	32	32	80	46	46
90	18	18	90	33	33	90	47	47
						600	47	...

TABLE 2
RESULTS OF PLANT SURVEY

Whole Plant—Total Examinations S=500
Observed No. Abnormal.... A=49
Expected B=40
Ratio $\frac{A}{B}$ 1.225*

Area 1	Area 2	Area 3	Area 4
S 125	S 200	S 75	S 100
A 15	A 12	A 5	A 17
B 13	B 19	B 9	B 11
R 1.15*	R 0.63	R 0.56	R 1.56*
Occupation	Occupation	Occupation	Occupation
(a) S 55	(a) S 75	(a) S 75	(a) S 82
A 6	A 2	A 5	A 12
B 7	B 9	B 9	B 19
R 0.86	R 0.56	R 0.56	R 1.33*
(b) S 30	(b) S 35		(b) S 18
A 5	A 3		A 5
B 4	B 5		B 3
R 1.25*	R 0.60		R 1.63*
(c) S 40	(c) S 50		
A 4	A 6		
B 5	B 6		
R 0.80	R 1.00 (?)		
	(d) S 40		
	A 1		
	B 5		
	R 0.20		

$R = \frac{A}{B}$ = abnormality index

This hypothetical survey shows too many abnormal examinations for

- (1) the plant as a whole;
- (2) areas 1 and 4; and
- (3) occupations 1b, 4a and 4b.

Occupation 2e gives an abnormality ratio of 1.0. It is apparently on the borderline of abnormality. Its true position might be found

by making another examination on each of this group and adding the results to the examinations used in the survey.

For allocation of new workers in this plant by the selective employment examinations, the order of increasing hazard by areas would be 3, 2, 1, 4; and by occupations, 2d, 2a, 3a, 2b, 1c, 2c, 1b, 4a, 4b. Only men with a perfectly normal selective examination including a blood pressure score greater than 0.10 and preferably greater than 0.20 should be allocated to occupations in which the abnormality index is above 1.0.

ANALYSIS OF RESULTS OF PERIODIC EXAMINATIONS

Workers in occupations offering a hazard to health from chemicals should be examined frequently. The time allowed to elapse between examinations will be conditioned by the speed at which the exposure produces physiological changes and by the convenience of the production department. The degree of protection afforded by ventilation, protective masks, clothing, etc., in relation to the toxicity of the compound, and the mode of its absorption must be taken into account. When absorption is mainly through the skin—and this is much more frequent than is generally supposed—it is considerably more difficult to protect workers than when absorption is only through the respiratory tract. In any case, for hazardous jobs, the periodic examinations should be made preferably at intervals of 2 to 3 weeks and should certainly not be more than a month apart. For jobs not hazardous, three, six, or even twelve months may elapse between periodic examinations unless changes in production methods introduce new chemicals. In such a case, a survey should be made as soon as the change occurs and repeated about 3 weeks later.

The program of periodic examinations should not be so rigid that any given worker is always examined on the same day of the week. Our general experience indicates that the incidence of abnormal scores is highest on the first day and the last day of the work week, (usually Monday and Friday). Examination of workers on these days gives the best index of the situation. Obviously, however, it is impractical in a large program to confine

examinations to two days. Therefore, as a compromise, days of examination should be so arranged that over a period of months, each worker is studied at least once on each day of his work week.

From these periodic examinations, answers to the following questions may be obtained:

(a) Does the group under study show too many abnormal examinations?

(b) Is this condition persisting?

(c) Is this due to a few men who repeatedly show abnormal blood pressure scores, or to the group as a whole? The procedure in answering these questions is, in general, the same as that used for the general plant survey. It is as follows:

(1) Record the results of examinations in the register shown in Fig. 3.

(2) At convenient intervals; e. g., one month, count for the occupation group the total examinations and the number with abnormal scores as shown under column T; and using Table 1, find the value of R (ratio

$$\frac{\text{Observed}}{\text{Expected}}$$

number of abnormal scores for the group). This answers question (a).

(3) Using the group total of data entered under Column C (cumulative totals), again calculate R. This cumulative total is important. While it is very convenient to divide study periods into units such as months, it must be remembered that the physical condition of neither worker nor plant is stable. The situation in one given month does not depend only upon what happens between 12:01 A. M. on the first day of the month and 12:00 midnight on the last day. It depends also on what has happened in preceding days, weeks and months. This is an important point in preventive industrial medicine. The weakest link in our chain of information lies in our past inability to assess the development of effects of chronic exposure. The cumulative method of studying blood pressure scores gives great assistance in filling this gap in our knowledge.

If, by the cumulative method a given group continues to give a value of R above 1.0, question (c) is important. The answer to this is obtained by the following steps:

(4) It has been pointed out that a worker, selected by an examination which requires a normal blood pressure score, when subsequently examined a very large number of times, should not show a score of 0.10 or less by chance alone in more than 6% of all his examinations. As in the case of groups, a statistically "very large" number of examinations is not obtainable. Therefore, again, one must employ the mathematics of random sampling and calculate the maximum expected number of abnormal examinations in the actual number of examinations made on the individual. Table 1 could be used, but greater accuracy is useful here. The maximum numbers of abnormal examinations expected to occur by chance alone in groups of various sizes are shown in Table 3.

Count the number of men who have been examined more than once in the period of study. (A man examined once only obviously cannot have more than his allowed number of abnormal scores.) Find the number of these who have shown more than the allowable number of blood pressure scores of 0.10 or less (Table 3). Using Table 1, find for the group of men examined more than once, the expected number of abnormal men and calculate R.

Example. In a group of 40 men, 35 were examined more than once in a period of study. Of these, six showed more than the allowed number of abnormal blood pressure scores. From Table 1, there should be no more than 5 abnormals in a group of 35 men. Hence,

$$R = \frac{6}{5} = 1.20.$$

Men who show more than their allowable number of abnormal scores we term, "chronically abnormal," and we mark an asterisk on the register page in the month in which, by the cumulative totals, they reach this stage. So long as their cumulative totals show too many abnormals, the asterisk is continued. When, by a period free from abnormal examinations, they fall again into a normal group, the asterisk is omitted.

(5) Deduct the number of examinations and of abnormal examinations given by the chronics from the totals for the whole group. This gives the number of examinations and abnormal examinations for the non-chronic

group, and R can then be calculated for this group.

In the summary at the bottom of Fig. 3, the abbreviations are as follows:

Chr. Ab. Men—the number of men who show more than their allowed number of abnormal blood pressure scores (0.1 or lower).

Ex. All Gp.—Examinations for whole occupation group entered as the fraction,
$$\frac{\text{abnormal examinations}}{\text{total examinations}}$$

TABLE 3
To Find Maximum Expected Number of Abnormal Examinations Given by an Individual

Total Examinations	Maximum Expected Number with Score 0.1 or less
1 - 6	1
7 - 14	2
15 - 23	3
24 - 31	4
32 - 41	5
42 - 51	6
52 - 62	7
63 - 73	8

Ex. N. C. Gp.—Abnormal and total examinations for the nonchronic group—obtained as given in Step (5) above.

Ratio - C. Men—
$$\frac{\text{Number chronic men}}{\text{Expected number of chronics as explained in Step (4).}}$$

All Ex.—Ratio
$$\frac{\text{Observed abnormal examinations for whole group.}}{\text{Expected}}$$

Ex. N. C. Gp.—Ratio
$$\frac{\text{Observed abnormal examinations for nonchronic group.}}{\text{Expected}}$$

As in the general plant survey, a ratio with value above 1.0 suggests an occupational exposure. By the breakdown described in steps 4 and 5, it can be found whether the group ratio is due to

- (1) a few chronics,
- (2) to too many chronics, or
- (3) to a general occurrence of abnormal examinations throughout the group.

If R for chronic men is below 1.0, then it is probable that individual factors cause some men to be chronic. If R for chronic men is greater than 1.0, it is extremely probable that exposure to a chemical is producing a chronic condition of abnormal circulation. If R for the whole group and for the nonchronic group is above 1.0, the exposure appears to be general in the group. (In such a case, R for chronics may be above or below 1.0)

THE DEVELOPMENT OF ABNORMAL SCORES

Before discussing the use of results of the analysis described above, we will consider the development of abnormal blood pressure scores as shown by a study of thousands of examinations of workers exposed to a variety of chemicals, and a study, using exactly the same procedure, of laboratory animals exposed to chemicals under controlled conditions. We are not considering results of accidental acute exposures, but of low grade exposures of a type which is extremely frequent in industry and which can lead to chronic abnormality.

The trend of development of abnormal scores can be rather clearly divided into five stages:

Stage 1. The minimal concentration of a chemical sufficient, on absorption into the body, to cause detectable physiological change, can be withstood for a varying period of time without the appearance of symptoms or of significant changes in blood pressure score.

Stage 2. With the blood pressure score normal on the morning of the first day of the work week, there will be an abnormal score on leaving work on the last day of the week, but a week-end of proper rest restores normality.

Stage 3. With a normal score when commencing work on the first day of the week, the score at the end of that day will be abnormal, but proper rest overnight restores the normal morning level.

Stage 4. The rest overnight is inadequate to restore blood pressure score to normal, so

that the degree of abnormality gradually increases throughout the week. However, the week-end of proper rest restores normality.

Stage 5. The week-end of rest is no longer sufficient to bring the blood pressure score back to normal.

If, at any point beyond stage 1 the worker is exposed, even for a short time, to higher concentrations of the harmful chemical, there may be a rapid deterioration in his condition. In fact he may respond in a manner out of all proportion to the intensity of this new exposure. His response may be more drastic even than that of a hitherto unexposed worker suddenly subjected to a very much higher concentration of the chemical. This mode of response may be the basis of the so-called 'idiosyncrasy' of workers. It is often the source of the "temporary inadequacy" of personnel described above as a cause of accidents. This response is, therefore, of great significance.

It has been pointed out above that the physiological changes leading to abnormal blood pressure scores are not specific for any chemical but may be produced by factors other than chemicals. These include disease, malnutrition, self-medication or improper medication, fatigue, and sudden deprivation of oxygen. It is possible that any one of these factors may force a worker beyond stage 1. As a result he will become sensitive to concentrations of chemicals which usually will not affect him. It is also possible that a worker, forced beyond stage 1 by exposure to industrial chemicals, will suddenly deteriorate because of the action of one or more of these other factors.

At this stage it is important to discuss briefly the "external" factors (i. e., those external to industrial exposure), which act in the same manner as industrial exposure to chemicals.

(Concluded in March issue)

Editorial

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FEBRUARY, 1943

No. 2

TOMMYROT

We have just returned from Chicago, where, as a member of the Delaware State Board of Medical Examiners, we represented this state at the 39th Annual Congress on Medical Education and Licensure. The program of this important meeting will be found on page 33.

One of the pressing problems on which we sought enlightenment on our arrival, for the *nth* time, in the Windy City (it was a mere 6 below when we got there), was what was to become of our internes after they had spent nine months in our hospitals. Would the Army take them then? Would the Navy? If they wouldn't, what would be the disposition of Group A after Group B arrived? An authoritative official answer to these and kindred questions was not made, except that the Navy *would* take internes of nine months and arrange for the final three months internship within the service. This was some

help, but not enough, since the Army requires several times the number of doctors that the Navy does.

It was the Army primarily that requested the medical schools to streamline their courses so that doctors would be graduated in three instead of four years. The schools agreed, and with considerable extra strain on their personnel and material resources, are doing this job and doing it well! This means that every nine months a new crop of internes is available for the hospitals and hence every nine months a crop of internes will be leaving the hospitals, ready to enter the armed services. Bear in mind that at this point in their careers the Navy *will* accept them. The different attitude of the Army is illustrated by the following letter, replying to a query which we instigated:

WAR DEPARTMENT Services of Supply

Office of the Surgeon General
Washington

February 13, 1943.

Mr. C. A. Hume,
Superintendent,
The Delaware Hospital,
Fourteenth and Washington Streets,
Wilmington, Delaware.
My Dear Mr. Hume:

The Surgeon General directs that I acknowledge your letter of February 11th, 1943.

We are acutely aware of the difficulty caused by the overlap due to the accelerated medical program insofar as it concerns internships. This has been a vexing problem with us insofar as it pertains to our individual supporting hospitals, to the Federation of State Boards of Medical Licensure, and to the Procurement and Assignment Service.

We are, however, on recommendation of Mr. James Hamilton of the American Hospital Association and the Council on Medical Education of the American Medical Association, insisting on 12 months internship. If we once accept an interne at the end of 9 months and put him on active duty status with pay, we fear that it will put the Surgeon General in the light of competing with the hospitals for internes. It is, therefore, our respectful request that such internes be allowed to secure affiliated services for the remaining 3 months if they cannot be handled in the capacity of sub-residents. In this connection, Dean Rappleye of New York or Dr. Buerki of the University of Pennsylvania School of Medicine have tentatively agreed to serve as clearing houses for such services.

Sincerely yours,

DURWARD G. HALL,
Lt. Col., Medical Corps,
Assistant.

From the above, it is the laudable purpose of the Army not to compete with the hospitals for internes. Is the Army competing if they take internes which the hospitals want to get rid of and for whom no housing is available? Is the Army competing if they take internes for whom no salaries or stipends are available? Is the Army competing if they take internes so numerous as to be in each other's way? Tommyrot!

The makeshift of "affiliated services for the remaining 3 months" is yet to be tried. Judging from the tone of his remarks at Chicago we doubt if Dean Rappleye expects it to work very well; we ourselves fear it will turn out to be a mere gesture, in which case the hospitals, every nine months, will have two crops of internes to house, feed, and pay, for the next 3 months, the senior crop being billeted in boarding houses as near the hospital as possible, and rendering a minimum of service to the hospital, meanwhile losing the educational momentum which the internship is intended to provide. This situation sizes up to—more tommyrot.

Since one of the major premises of the streamlined program was that there should be no deterioration in the quantity or quality of medical education, take a good look at the internship of today. With a shortage of civilian doctors, more and more patients are obliged, in the more serious illnesses, to go to the hospitals, which are now running 100-110% of normal capacity. Before the emergency they were running 75-80% of capacity. Using the lower figures, it is apparent that a nine months servicee at 100% is exactly equal to a twelve months servicee at 75%. Certainly, with waiting lists at all our local hospitals, the interne here today gets as much education in nine months as he formerly got in twelve months. This crowding of the hospitals is general throughout the country, hence a blind insistence on twelve months is again—plain tommyrot.

The other angle to this internship question is that of licensure. The laws of most states specify that the medical curriculum shall extend over four years; some even specify that these four years shall be four different calendar years; some simply say four academic

years. Streamlining the course to three years now requires either legislative relief or Attorney-General opinion to the effect that the present law grants sufficient latitude. Further, most laws require an internship of twelve months, so again relief must be had either by legislation or opinion.

At the December conference of the Executive Committee of the Federation of State Boards and the Directing Committee of the Procurement and Assignment Service a "model bill" was drafted, and sent, as a suggestion, to all the states. This bill has been introduced into the legislatures of some 22 or 23 states, with prospects of prompt enactment. The remaining states are, apparently, straightening out their legal problems on an independent basis.

Further, Delaware and Pennsylvania were the only states that added a new section specifically providing for the nine months internship, so the Board in this state is all set to go as soon as our bill (S. B. No. 38) passes the House. It has already passed the Senate and the Governor is for it.* Then, should we receive applications from the crop whose nine months internship is over on March 31st, we will arrange to examine them promptly, probably on April 13-15th. Pennsylvania will do likewise.

But back to our original thesis. Why can't the Army do what the Navy does? Do they have some really good reason, as yet undisclosed, or are they over-influenced by ultra-conservatism? We are in a dire emergency: what is the course to be—expedition and expediency, or tradition and tommyrot?

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* The Governor signed this bill March 4, 1943.

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REPORT OF THE COUNCIL ON MEDICAL EDUCATION AND HOSPITALS OF THE AMERICAN MEDICAL ASSOCIATION.

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***EDUCATION AND THE WAR.**

EDWARD C. ELLIOTT, LL. D., Washington, D. C. Chief, Professional and Technical Employment and Training Division, War Manpower Commission.

***PREMEDICAL AND MEDICAL EDUCATION AS RELATED TO THE UNITED STATES ARMY.**

BRIGADIER GENERAL JOSEPH N. DALTON, Washington, D. C., Assistant Chief of Staff for Personnel, United States Army.

***MEDICAL EDUCATION AS RELATED TO THE PROCUREMENT AND ASSIGNMENT SERVICE.**

HAROLD S. DIEHL, M. D., Minneapolis. Member, Directing Board, Procurement and Assignment Service for Physicians, Dentists and Veterinarians.

GRADUATE EDUCATION AND THE WAR.

DONALD C. BALFOUR, M. D., Rochester, Minn. Director, Mayo Foundation for Medical Education and Research.

***MEDICINE AND THE WAR.**

COL. GEORGE F. LULL, M. D., Washington, D. C. Chief, Personnel Division, United States Army Medical Corps. (Representing the Surgeon General of the United States Army.)

REAR ADMIRAL ROSS T. MCINTIRE, M. D., Washington, D. C. The Surgeon General, United States Navy.

THOMAS PARRAN, M. D., Washington, D. C. The Surgeon General, United States Public Health Service.

MEDICAL LICENSURE AND CIVILIAN MEDICAL NEEDS.

HARVEY B. STONE, M. D., Baltimore. Member, Directing Board, Procurement and Assignment Service for Physicians, Dentists and Veterinarians.

MOBILIZATION OF CANADA'S HEALTH RESOURCES OF WAR.

THOMAS C. ROUTLEY, M. D., Toronto, Ontario. General Secretary, Canadian Medical Association.

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MEDICAL SCHOOLS IN WARTIME.

WILLARD C. RAPPLEYE, M. D., New York. Dean, Columbia University College of Physicians and Surgeons.

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JULIAN F. DuBois, M. D., St. Paul, Secretary, Minnesota State Board of Medical Examiners.

ROUND TABLE DISCUSSION—STATE BOARD PROBLEMS.

MEDICAL LICENSURE AND PUBLIC HEALTH.

FELIX J. UNDERWOOD, M. D., Jackson, Miss. President-Elect, American Public Health Association; Secretary, Mississippi State Board of Health.

NECESSARY LEGISLATION FOR GRADUATES OF ACCELERATED MEDICAL COURSES AND TEMPORARY INTERSTATE RELOCATION OF PHYSICIANS.

J. W. HOLLOWAY JR., Chicago, Director, Bureau of Legal Medicine and Legislation, American Medical Association.

BASIC SCIENCE LAWS, BOARDS AND PRACTICES
IN THE UNITED STATES.

ORIN E. MADISON, Ph. D., Detroit,
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Examiners in the Basic Sciences.

PRESENT DAY DIFFICULTIES OF MEDICAL
PRACTICE AND LICENSURE.

ADAM P. LEIGHTON, M. D., Port-
land, Maine. Secretary, Maine
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UNIFORM INTERSTATE ENDORSEMENT AS A
WAR EMERGENCY MEASURE.

J. EARL MCINTYRE, M. D., Lansing,
Mich. Secretary, Michigan Board
of Registration in Medicine.

OBITUARY

CHARLES G. HARMONSON, M. D.

Dr. Charles G. Harmonson, of Smyrna, died at his home on February 4, 1943, at the age of 81 years. He had just rounded out 58 years of active practice in the Smyrna-Clayton area.

After his graduation from Jefferson Medical College in 1884, Dr. Harmonson began the practice of medicine in Clayton and had since that time been active in the affairs of both Clayton and Smyrna. He had been a president of the Kent County Medical Association, a charter member of the Smyrna Rotary Club, one of the organizers and former vice-president of the Clayton Bank and Trust Co., former president of the Clayton Savings and Loan Association, and former trustee of the Smyrna Library Association. He was a communicant of St. Peter's Church.

Dr. Harmonson was a member of the Kent County Medical Society, the Medical Society of Delaware, and the American Medical Association.

His first wife, Lola Blackiston Harmonson, died in 1938.

Surviving are his widow, Pauline Start Harmonson; a son, C. Leland Harmonson, of Smyrna; a granddaughter, Mrs. H. Kline Weir, of Pittsburgh, and two great-grandchildren.

Funeral services were held on February 7,

1943, at St. Peter's Episcopal Church, with the Rev. Frederick Marx Barton officiating. Interment was in Glenwood Cemetery, at Smyrna.

BOOK REVIEW

Indigestion: Its Diagnosis and Management.
By Martin E. Rehfuess, M.D., Professor of
Clinical Medicine, and Sutherland M. Prevost,
Lecturer in Therapeutics, Jefferson Medical
College. Pp. 556, with 63 illustrations. Cloth.
Price \$7.00. Philadelphia: W. B. Saunders
Company, 1943.

This is a very complete work covering medical and surgical conditions of the G. I. tract. Starting with the chapter on "Taking the History," there are many suggestions and explanations with a most concise method which, if carefully followed, should be invaluable to the general practitioner.

"Physical Diagnosis" is thoroughly covered and is profusely illustrated with charts and diagrams of topographical anatomy and differential diagnosis. The value of the gastroduodenal tube to the general practitioner is explained and many practical suggestions for its use are given.

X-ray examination includes much of the teachings from Carman, with numerous drawings showing niches and characteristic deformities of gastric and duodenal ulcers.

Gastroscopy and gastrophotography, showing many films of gastric disease which could not be diagnosed by any other method, is indeed very interesting and modern. Many classes of indigestion are considered, both functional and organic, such as ulcer, malignancy, biliary types, cardiac types, allergy, and the most common of all, nervous indigestion.

There are many charts and tables furnishing valuable information on foods, giving composition, values and vitamins, as well as special diets, with detailed methods of treatment.

In all this is a most remarkable book, which should be accepted enthusiastically by the profession as a whole.

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This review results from a study supported by the Wine Advisory Board, an agricultural industry administrative agency established under the California Marketing Act, and has been sponsored by the Society of Medical Friends of Wine.

Members of the medical profession are invited to write for this monograph. Requests should be made to the Wine Advisory Board, 85 Second Street, San Francisco.



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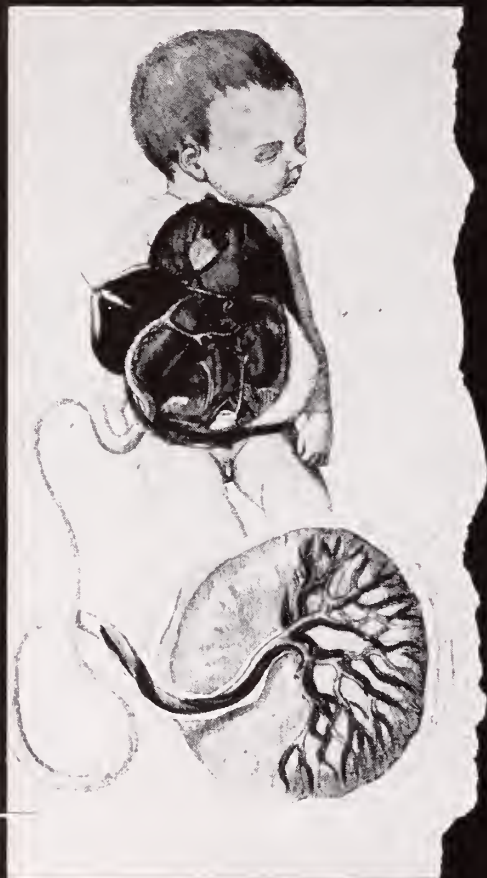
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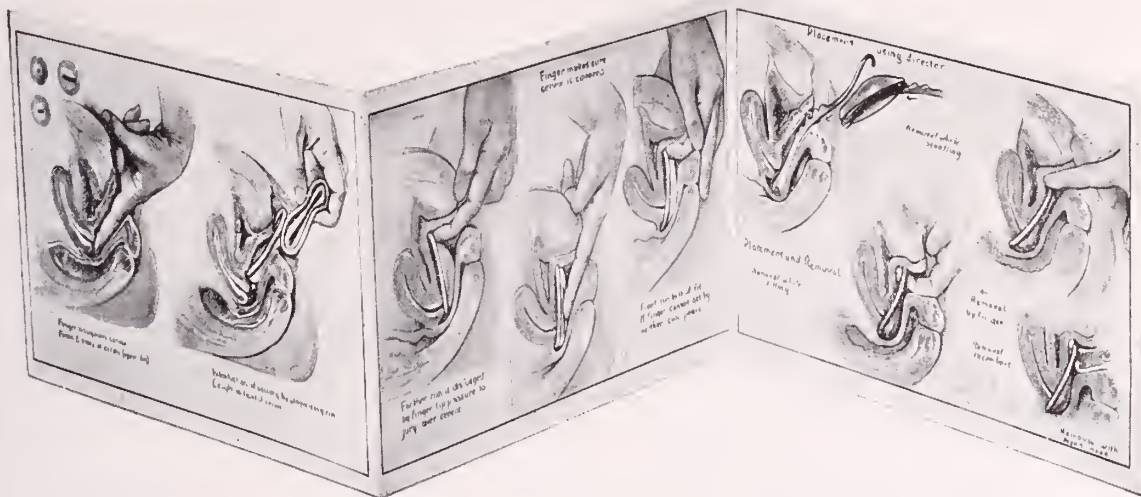
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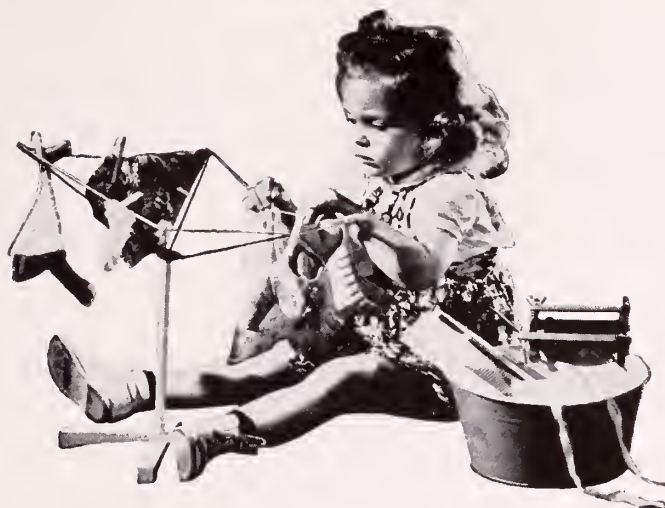
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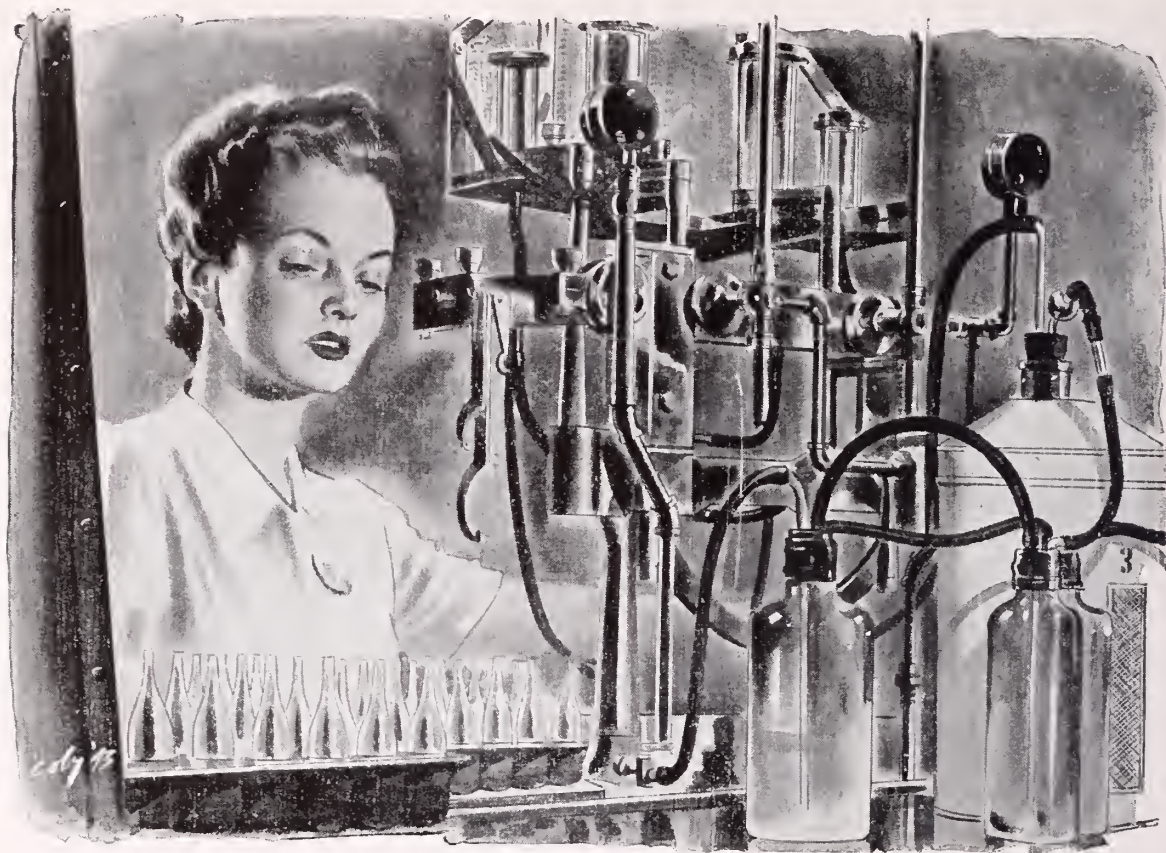
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MEDICAL CONTROL OF INDUSTRIAL EXPOSURE TO TOXIC CHEMICALS

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(Concluded from February issue)

EXTERNAL FACTORS.

Abnormal blood pressure scores may be produced by any conditions which interfere with the normal metabolic processes of tissues. Thus, they may result from:

1. Improper nutrition (improper as to quantity, quality, timing, and especially vitamin content).
2. Improper medication (unnecessary or badly controlled use of the "sulfa" drugs).
3. Self-medication (the use of "pick-me-ups" containing drugs such as aniline derivatives; also alcohol).
4. Unnecessary exposure to abnormal climatic conditions.
5. Unnecessary exertion, leading to fatigue.
6. Disease (which is, in essence, chemical poisoning).
7. Deprivation of oxygen (resulting from sudden transfer to great altitudes or prolonged work in ill-ventilated enclosures).
8. Any combination of one or more of the above.

These factors may act quite independently of the worker's occupation. They are, very decidedly, situations over which he should have control, or might control, if he were properly advised. They are extremely important in industrial maintenance of health.

NUTRITION

The state of nutrition of the nation is receiving intensive study since Selective Service medical examinations disclosed a high proportion of men of military age with defects obviously due to faulty metabolism. Daily, evidence grows that many people have

not received properly balanced diets. Claims that such is not the case are based chiefly on determinations of the vitamin content of raw foods. There is practically no information on the vitamin content of foods as eaten; i. e., after kitchen manipulations have destroyed part or all of the important components. Our own work has shown conclusively that exposure to chemicals can interfere with the ordinary metabolism of vitamins and that those exposed to harmful substances in industry can be protected, to a considerable degree, against the early signs of action of such materials by a maximum daily intake, especially of vitamin C and the B group. It is interesting to note that clinical C and B deficiencies can produce almost the same group of symptoms as are found in early action of toxic industrial chemicals. The lowered muscle tonus produced by chemicals may also be present in B₁ and C deficiencies.

In theory, dietary deficiencies among workers should be adjusted by proper education. Actually, an educational program has been carried on throughout this Nation for many years, and apparently without success as yet. In war production, time is important. However intense the program of education now set up, regional traditions and personal fancies will act against complete success.

It is important to realize that the diet of workers must be adequate not merely as to quantity and vitamin content, but also as to distribution through the day. The total daily intake may be ample, but if confined to one large meal it may leave a rather long period during which the stomach is relatively empty. During the first World War, it was noted that improper distribution of meals could be a source of great disability in workers exposed to TNT. Many plant surveys show that men coming off the early morning (12 to 8) shift show abnormal blood pressure scores more frequently than workers on other

shifts. This may be due partly to lack of adaptation to night work, but it also may be due to lack of proper distribution of food intake.

Control of the diet of workers is particularly difficult in war plants. The size and layout of many plants make it hopeless to expect men to go to a central cafeteria for lunch. It is difficult to assure both adequate food intake and cleanliness of eating conditions. In such circumstances it seems to us reasonable and proper to supplement the worker's diet by concentrated vitamin preparations, containing at least a daily dose of 1 mg. of B₁ and 100 mg. of vitamin C.

MEDICATION

Chemicals used in therapeutics may have the same early physiological action as those absorbed in industrial exposures. In fact, physicians are in the habit of prescribing much higher concentrations of synthetic chemicals than are found in industrial exposures of workers.

The drugs of the "sulfa" group are proving extremely valuable when properly used. It does not detract from their value to point out that they are far too widely and too carelessly prescribed in clinical conditions for which they are not really necessary. They have caused many cases of serious poisoning, but it has not been sufficiently emphasized that even single therapeutic doses can have marked and dangerous physiological effects. The following quotation from editorial correspondence in the *Journal of Aviation Medicine* (2) is significant.

"The use of sulfanilamide in the treatment of disease has increased our care of flyer problems. The British have found that a single dose reduces a pilot's ceiling about 5,000 feet. We have had one death just after flying from it, and one collapse. It is easily obtainable by anyone and in fact, civilian doctors prescribe it without a thought of danger in relation to flying."

If a pilot flies above his ceiling (12,000 to 14,000 feet) without using oxygen he may pass rapidly through all the early stages of action of toxic chemicals to a state of circulatory collapse. When under treatment with sulfanilamide and similar drugs he has progressed well toward stages 4 and 5 even before

flying, and a sudden decrease in oxygen supply may prove disastrous. In industrial medicine, the early action of toxic chemicals closely simulates oxygen deficiency and may lead to as drastic results as are experienced in aviation.

Further evidence of the action of sulfanilamide is given by Houghton and his collaborators: (3)

"The mental and physical handicap of taking the drug in this dosage (2-3 grams daily) is greater than the psychological and physiological tests would indicate. Aside from the vomiting in two of the six cases, each of the subjects had a feeling of considerable malaise and mental incompetency. Such feeling was not conducive to good work in the laboratory during the period of the drug and *would undoubtedly impede the skilled activities of workers in industry or the military*. In emergency, however, a considerable amount of unskilled labor should still be possible, provided the subjects are free from vomiting."

An editorial note in *J. A. M. A.* on Mental Confusion from the Sulfonamides (4) refers to a Report of the Committee on Disability and Rehabilitation, Medical and Surgical Section, Association of American Railroads, in which "it is recommended that a patient, after receiving treatment of this type, should be free from work for seven to fourteen days following such administration, before being permitted to resume duties in either engine or train service. The possibility of serious mental confusion must be borne in mind especially for those whose activities under circumstances of impaired judgment would be particularly hazardous to others. This would include many occupations in civil life and practically all those in military fields."

The effects of the "sulfa" drugs are rather lasting. We have record of at least one case in which a worker, having reached a state of circulatory collapse, failed to recover, with rest, in the normal period of 2 to 6 hours. He was under treatment with a "sulfa" drug merely because he showed an unexplained temperature rise. Actually, three weeks of rest were needed before a normal circulatory score was restored.

In a less serious degree the same situation applies to antileptic treatment with organic

arsenicals. Indeed, we wonder whether a luetic under aetive treatment is not in greater hazard, when exposed to harmful industrial chemicals, than one not so treated. This problem is important if there is exposure to substances (such as chlorinated hydrocarbons or aromatic nitro compounds), which may injure the liver.

SELF-MEDICATION

The use of patented drug mixtures as treatments for headaehes, etc., is widespread. Some contain aniline derivatives which are quite active physiologically. Such self-medication can produce all early stages of chemical exposure and render a worker sensitive to materials to which he may be exposed in industry.

There is no need to point out that excessive indulgence in aleohol can be considered here as self-medication.

EXTREMES OF TEMPERATURE AND HUMIDITY

Unusual levels (high or low) of temperatures, and high humidity with high temperature, do not usually affect well-nourished normal persons. However, workers in the early stage of action of harmful chemicals react to high temperature (and to extremely low temperature) by rapid deterioration of eirculation. In fact, a seasonal trend in the abnormality ratio obtained from the blood pressure scoring system is almost certain proof of a mass exposure to harmful material.

There are many possible eauses of that trend, but the most important appear to be the following:

(a) With increase in temperature the atmospheric concentration of toxic materials may be increased. When temperature and humidity reach such levels that there cannot be free evaporation of perspiration from the skin, there may be increased possibility of skin contact with and absorption through the skin of toxic substances.

(b) The normal meehanism by which the body maintains its temperature involves a dilation of skin blood vessels in hot weather, and constriction of these vessels in eold weather. The peripheral blood vessels can hold a relatively large fraction of the total eirculating blood. The diversion of blood to these skin vessels, on hot days may well eause

such change in the balance of eirculation that, when it is added to the change already eauseed by toxic ehemicals, a worker may develop an abnormal score.

(c) When the atmospheric temperature is very near the temperature of the skin, heat loss by radiation becomes difficult. This situation is aggravated when the air is still and humidity is high, and perspiration cannot evaporate. The perspiration then pours off the skin or is soaked up by clothes. It has been shown recently that significant quantities of vitamins C(5) and B₁(6) are lost in the perspiration so that, in extreme cases, prolonged work in hot, humid atmosphere can lead to clinically recognizable vitamin deficiencies. Vitamins B₁ and C (as well as others of the B group) are elosely linked up with the oxidation-reduction proeesses in tissues. A relative vitamin deficiency eauseed by loss of vitamins in perspiration can, as has been described above, produce eirculatory abnormality of the same type as, and superimposed on, that due to toxic ehemicals. Further, there is evidence that, in absence of adequate vitamins B₁ and C, there is a loss of ability to detoxify ehemicals. In either ease, extremely high temperatures and humidities may, by producing loss of vitamins, aggravate the condition already existing in men affected by industrial ehemicals.

UNNECESSARY FATIGUE

Over-exercise, when away from work (especially during extremes of temperature) may have a great influence on the trend of resistance to ehemicals. Often, in a routine program of study by blood pressure scoring, men are found to be in very poor condition on Monday morning, but improve greatly during the week. In spite of a minimal exposure to harmful ehemicals, the work period may act more as a "rest" period than the supposed week-end rest away from work.

A very important factor in the Monday morning picture may be excessive automobile driving over the week-end. The fatigue of driving added to an improper food intake leads to physiological abnormality. There is too often, in addition, an exposure to earbon monoxide from exhaust gases. Few people pay much attention to the condition of mufflers

and exhausts in their cars and in cold weather they are apt to reduce ventilation to a minimum. It is well known that in congested traffic, significant concentrations of carbon monoxide collect in cars which follow closely in line. We have one record of a man who, after a week-end of driving, appeared at work in poor condition and suffered circulatory collapse an hour or so later, after a degree of chemical exposure which, as clearly shown by records made every two weeks for several months, would not usually give him an abnormal blood pressure score and which did not affect other men in his group on the day in question.

DISEASE

Disease due to bacterial infections or parasitic infestation is really the result of chemical poisoning and can produce all the stages of abnormality listed above. An attack of "grippe" or acute upper respiratory infection can advance a worker so far on the route of physiological change that he may react to a low concentration of a toxic chemical by a drastic fall in blood pressure score.

DEPRIVATION OF OXYGEN

Sudden reduction in the available supply of oxygen, such as occurs in flying to high altitudes, or working in restricted, unventilated enclosures, will have the same physiological effect as toxic chemicals. Added to chemical exposure, deprivation of oxygen may have drastic results. Thus, Heim (7) has shown that "concentrations of carbon monoxide which are innocuous at sea level become dangerous at even moderate altitudes." This situation is not specific for carbon monoxide. It applies also to the action of hydrocarbon solvents used in the manufacture of paints and is operative when those paints are used in poorly ventilated rooms or cabins. It applies also to the household use of cleaning solvents, without proper ventilation.

THE USE OF RESULTS OF PERIODIC EXAMINATIONS

The periodic survey of blood pressure scores made as described above will indicate

- (a) occupation groups showing too many abnormal scores;
- (b) individuals showing too many abnormal scores; and

- (c) individuals showing at least one abnormal score.

A preventive medical program takes care of each situation as it arises.

If the group ratio shows too many chronic men or an overall occurrence of too many abnormal scores in the nonchronic group, the immediate inference is that the group is suffering from industrial exposure to chemicals. (Only on rare occasions will it be suffering from an epidemic of disease or self-medication or alcoholism.) Immediate attention should be paid to the conditions under which the men work. These include atmospheric concentrations of toxic materials, possibilities of skin contact, efficiency of ventilating and other protective equipment such as respirators and gas masks; cleanliness of the work place and personal cleanliness of the workers, and their clothing. Steps should be taken at once to remedy any defects found. The degree to which remedies are effective will quickly be shown by blood pressure scores.

Every worker showing too many chronic examinations should be studied carefully. His place of work, his manner of working, any differences between his possible degree of exposure and that of other group members must be noted. With assistance of the personnel division, every possible inquiry should be made concerning those "external factors" described above, which may contribute to his sensitivity to chemicals. In this inquiry the worker will usually give keen and grateful cooperation, once he knows its purpose—to keep him in the best possible state of health.

If the periodic examination program is properly conducted each man should be studied whenever he gives an abnormal blood pressure score. He should be re-examined within seven days and if the second examination is abnormal, as exhaustive an inquiry should be made as in the case of a "chronically" affected worker.

While in this description greatest emphasis has been placed on the occurrence of blood pressure scores of 0.1 or less, it must not be forgotten that any downward trend of score is an index of reduced normality. The occurrence of a score below 0.20 gives a very good warning of the trend of events. Additional warnings are given by any blood pres-

sure readings on either arm which fall beyond the arbitrary limits given above.

The success of this or any other system of preventive medicine depends on unceasing vigilance and quick action when an unusual condition is disclosed.

EFFECTS OF CONTINUED ABNORMAL
BLOOD PRESSURE SCORES

The physiological condition disclosed by an abnormal blood pressure score is at first merely functional. Given proper attention to its cause, it is easily reversible. Lack of attention, however, may lead to serious injury to health.

The rather anomalous situation exists that continuation of an abnormal score due to high diastolic blood pressure is often of more ultimate seriousness than continuation of abnormal scores due to low diastolic pressure. If allowed to continue, a diastolic pressure above 90 mm. may slowly rise to levels of 100 to 110 mm. even after complete removal of the worker from exposure to chemicals. Then, systolic pressure rises and there is established eventually both systolic and diastolic hypertension. Our records suggest that such conditions may be produced in workers below the age of 40 by prolonged exposure to low concentration of chemicals, which are usually considered harmless because they do not produce acute poisonings.

Continued abnormal scores due to low diastolic pressure often lead to circulatory collapse. After a time all three pressure components—systolic, diastolic and pulse pressure—fall to abnormal low levels. Inability of the circulation to compensate for changes in posture may lead to syncope by allowing the blood to pool in the lower part of the body. If a worker lies down with his head lower than his legs immediately he feels dizzy, the dizziness will disappear in a few minutes and one or two hours rest, with inhalation of oxygen or an oxygen and CO₂ mixture, will restore his circulation to normal. If he persists in working, his condition may become so serious as to produce a severe circulatory collapse, sometimes with fatal results.

INDEX OF CIRCULATORY BALANCE

A useful index of circulatory balance is obtained by employing the ratio

Pulse Pressure

$$\text{Diastolic pressure} + \frac{1}{3} \text{ pulse pressure}$$

as an index of the filling volume of the heart. Fig. 4 makes easy the reading of this index (called Volume Filling Index, V) directly from systolic and diastolic pressure. In calculating it, use the arithmetic average of the systolic pressure and the diastolic pressure at the 4th phase (change of sound) on the two arms.

Our experience shows that a value for V of 0.3 or lower indicates impending circulatory collapse. A worker may reach a value of 0.3 or less and yet, by a reflex increase of heart rate, force enough blood from the heart to prevent circulatory collapse. We consider a value of 23.0 for the product of V by the pulse rate as a useful lower limit of normal. Fig. 4 includes a table of the minimum pulse

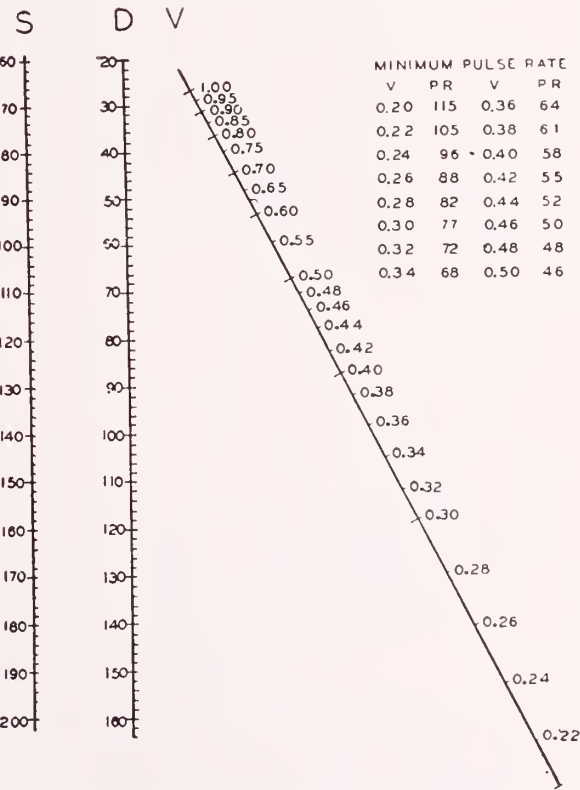


FIG. 4—Chart for calculation of filling volume index from systolic and diastolic blood pressures. To use this chart, simply stretch a piece of string or lay a transparent ruler across the chart in such a way that it cuts the reading of systolic and diastolic blood pressures and extends over to the volume index line. Read off the volume index and look at the table of minimal pulse rates to see whether or not the man's actual pulse rate is below or above that necessary for proper compensation

rates giving values of 23.0 with different values of V.

The volume filling index and its product by pulse rate are very useful in following the development of and recovery from circulatory collapse. As illustrations, consider the following:

A worker, age 43, presented himself at a plant hospital early in the morning, pallid, with unsteady gait and slightly dyspneic. He appeared exhausted and claimed he was overcome by heat. His blood pressure (measured on only one arm) was 113/75, and his pulse rate was 58. This gave him a volume filling index of 0.43. This requires a minimum pulse rate of 54 for compensation. With a rate of 58 he was obviously near collapse.

Again, a worker came to a plant hospital covered with beads of perspiration and appearing on the verge of collapse. His pulse rate was 54. His blood pressure (on one arm) was 94/70. This gave a value of 0.31 for V, requiring a minimum pulse rate of 75.

It is not implied that with values of V below 0.30, or of the product with pulse rate below 23.0, workers will necessarily collapse. But such values certainly give a limit for reference, and a warning for proper handling of individual cases.

REMOVAL OF WORKERS FROM EXPOSURE TO CHEMICALS

To remove a worker from his job because he continually shows abnormal blood pressure scores is merely to follow the path of least resistance. At the present time, such a practice can cause serious interference with production. If the scheme described above is followed properly, a man who gives an abnormal score on examination will be re-examined within a week. If the second examination again gives a bad score, investigation of the situation will be made at once and steps taken to remedy it. If, however, no solution of the problem is found by inspection of the conditions under and the manner in which the man works or by collecting all information possible on the action of "external" factors, it is advisable to remove the worker temporarily from all exposure to chemicals. The new job to which he is transferred must be physically less arduous than that from which he is re-

moved; otherwise, the increased exertion superimposed on an already abnormal circulation will prevent recovery and may even cause injury. During the period of temporary removal—which in most cases will not need to be longer than three weeks to a month—the man should be re-examined frequently; i. e., at least once a week. He should not be returned to work with chemicals until two examinations a week apart give normal scores. When this goal is reached and he returns to his previous job, he should again be examined once a week for two or three weeks. This is necessary because experience shows that a return to exposure to chemicals before adequate recovery from past action of those chemicals may lead to a sudden reduction in circulatory efficiency.

With proper conduct of the program outlined above, there should be only three causes for permanent removal from the job:

(a) A failure to recover normal circulation within reasonable time during temporary removal from exposure.

(b) A rapid return of abnormal scores when the worker goes back to the job after temporary removal.

(c) An intermittent injury or disease which renders him permanently unfit for the job.

THE SIGNIFICANCE OF ATMOSPHERIC CONCENTRATED OF TOXIC VAPORS, DUSTS, AND GASES

It will be obvious from our discussion of factors entering into the development of chronic poisoning of workers that there can be no general rule as to the atmospheric concentration of toxic vapors, dusts and gases, which can be considered safe. Yet various committees throughout the country are spending considerable time in trying to set up such so-called "safe" upper limits. These must necessarily be rather empirical figures obtained from studies of exposures to single chemicals. In industry, in the majority of cases, there are simultaneous exposures to a number of chemicals. The so-called "safe standard" can never take into account the cumulative action of the mixture of chemicals. Such "safe standards," therefore, while of use in assessing the relative efficiency of ven-

tilation schemes, cannot be relied upon as an index of the degree to which workers are affected by their industrial exposure.

In using the blood pressure scoring system to detect minimal physiological action of chemicals, it is frequently found that there is a significant number of abnormal blood pressure scores in groups working in occupations apparently protected by very efficient ventilation systems. There may be at least two reasons for this: First, the chemical or chemicals employed may be absorbed through the skin in which case, of course, ventilation is no protection; and second, the system of ventilation used may not be such as to remove vapors or gases at their point of origin before they can be inhaled by the workers. Most frequently the ventilation system depends upon dilution by throwing into the work area large volumes of "fresh" air from outside. When we consider the information given by our blood pressure studies, we realize that the actual dilution of the vapors, while bringing them much below the so-called "safe" upper limit, may still not be adequate to prevent all action of the toxic substance upon workers. If, in addition the intake air should be contaminated by chemicals from other work areas, there is actually produced a multiple exposure which, as we have already indicated, can have pronounced effects upon the worker.

It must be emphasized that the actual condition of workers cannot be demonstrated by air analyses or by citing facts as to the efficiency of ventilating systems. It can only be discovered by periodic medical examinations, adequate changes in physiology before actual injury has occurred.

* * * * *

Although this system of preventive medical control of industrial exposure to toxic chemicals has required rather a voluminous explanation, in practice it is actually very simple. It has been used, and is being used, in plants employing from 100 to 2,500 men. New sources of hazard to health are being disclosed by the preliminary survey method and the efficiency of physical protective equipment is being tested and the effect of changes in production methods estimated by continuous use

of the periodic examinations with blood pressure scoring.

For the moment, this scheme has been applied only in industrial medicine. It would probably be useful also in ordinary clinical practice, especially for study of the effects of therapy, surgical treatment, or stages in the development of and convalescence from an infectious disease. It will undoubtedly be of value in aviation medicine for there the problems confronting the physician differ little from those of industrial practice.

The value of the scheme is quickly determined by proper trial. Its routine and careful use can add much information to our knowledge of the causes and development of industrial disability.

Our attempt to follow development of chronic poisoning by a study of the early physiological action of industrial chemicals has led us to the admission that exposure to chemicals may play no greater part than a number of other factors which lie outside of the worker's occupation. This should not be surprising. Man's life cannot be divided into clear-cut time elements—day and night, work and play, 1935 and 1942. It is continuous. Man's physiological condition at any given instant is the integration of all that has gone before, and man's reaction, the next instant, to a change in environment necessarily depends upon the picture formed by that integration. The industrial physician trying to prevent ill health cannot confine his attention solely to the events of the work day. The sixteen hours away from the job are equally important. The worker must be told how important they are. The family physician, treating his patient for a non-occupational condition, should remember that his therapy may also influence the patient's industrial life.

Maintenance of health in industry is a collective responsibility. Worker and employer, plant physician and family doctor all have a part to play, and each one's manner of playing may affect the others. Now that our very existence as a free nation depends on the output of war industries, and that in turn upon continuity and efficiency at the job, we must each accept our part in our collective responsibility. There has never been a greater op-

portunity for the highest type of medical service.

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ACUTE AGRANULOCYTOSIS DUE TO SULFADIAZINE

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Sulfadiazine has been widely used because of its greater clinical application in a variety of infections and also because of the earlier reports of freedom from some of the more common toxic reactions such as nausea and vomiting. Only two cases of agranulocytosis due to its use have so far appeared in the literature (1)-(2).

It may be of interest to record another case of sulfadiazine-agranulocytosis. This occurred in a patient when the blood concentration of the drug was at a relatively low level (6.5 mgm. of free sulfadiazine per 100 cc of blood.) It is also of interest because of the prompt return of the white counts to normal after therapy.

REPORT OF CASE

A 37-year-old, white male American was admitted to St. Francis Hospital, Wilmington, on the medical service on June 10, 1942, with the chief complaint of extreme fatigue of many months duration. Except for scarlet fever during childhood and a tonsillectomy in July, 1941, the patient had been perfectly well until the fall of 1941 when he first complained of gradually increasing fatigue for which he was admitted to the Wilmington General Hospital in January and discharged in March, 1942. Following this he felt much improved until the end of April, 1942. At this time he had pains in the knees and ankles, associated with edema and mild red discolora-

tion around the metatarsal joints. He was treated at home without absolute bed rest and temperatures were not recorded. There was no history of venereal or rheumatic disease but during his first hospitalization in January, several blood cultures were positive for streptococcus viridans. The family history was essentially irrelevant.

Examination showed an undernourished white male appearing moderately sick, mentally alert and cooperative. The temperature was 100° F; pulse rate, 122; respiration, 24; and blood pressure 104/58. His skin had a yellow-grayish color, and was rather dry and rough. No petechiae could be found. The pupils were round, equal, and reacted promptly to light and accommodation. The conjunctivae were pale and not injected. The tongue was clear, the tonsils had been removed, and no lymphnodes or enlargement of the thyroid gland were noticeable. The lungs were clear throughout on percussion and auscultation. The heart was in the normal limits of size, with a prominent systolic thrill at the apex and in the aortic area. A loud rough systolic murmur covered the first sound in the apical region and both sounds in the aortic area. At the pulmonary ostium the first sound was split and a loud systolic murmur was audible.

The abdomen was soft, relaxed, and the liver was not enlarged. Although there was some tenderness in the left upper quadrant, the spleen was not palpable but was percussible over a surface of about 6-8 cm. Some ankle edema was present without any regional discoloration or increase in temperature.

The blood Wassermann and Kahn reactions were negative. The urine was alkaline, with a faint trace of albumen, and was negative for sugar, with only a few white blood cells present per high-power field.

The sedimentation rate was 44 mm. in 30 minutes.

The red cell count was 3,100,000. White cell count 7,650 with 78% polymorphonuclears, 19% small lymphocytes, 2% large lymphocytes, 1% monocytes and 60% hemoglobin. A blood culture taken on the day of admission revealed the presence of nineteen colonies of streptococcus viridans in 2 cc. of blood after two days incubation. The patient

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was typed and an adequate list of compatible donors secured as the treatment was outlined.

Two days after admission sulfathiazole was started. Two grams of the drug were given by mouth every four hours, but had to be discontinued thirty-six hours later because of vomiting. Sodium sulfathiazole was then given intravenously, gram 1 every eight hours, and the dose was increased to grams six daily in three injections. After two days blood sulfathiazole concentration reached a level of 6.4 mgm. and there was a reduction in the temperature curve. On June 23rd the patient refused further intravenous therapy, and sulfadiazine, more easily tolerated, was started orally beginning with 4 gms. for the first dose and one gram at three or four hour intervals according to the blood level which had been checked every other day (see table). On June 23rd administration of typhoid-paratyphoid vaccine was started with 0.2 cc and gradually increased to 0.4 cc, 0.5 cc, 0.6 cc, 0.8 cc, 1 cc, and 1.4 cc on July 8, without appreciable changes in the temperature curve or blood culture. Accessory therapeutic measures such as high caloric, high vitamin diet, daily injections of liver extract, stimulation, and blood transfusions had been given during the course of the treatment.

Because of a change in personnel, a sore throat, that had been present for two days, was not reported until July 16. Examination at this time revealed only a slight reddening of the pharynx and beginning ulceration around the gum margin of the left lower molars. The white cell count was 2,350. Sulfadiazine therapy was immediately discontinued and adequate doses of pentnucleotide given intramuscularly. The next day immediately following the administration of 10 cc of pentnucleotide, the patient developed a marked reaction characterized by fainting which gradually merged into unconsciousness. As it was feared that pentnucleotide medication might have to be discontinued because of this sensitivity, it was thought advisable to try the induction of a sterile abscess. The purpose was to mobilize the white cells after stimulation of the hematopoietic system had been started. The same day 4 cc of autoclaved turpentine were injected into the left rectus muscle between the

umbilicus and the anterior-superior spine of the ileum. Reference to the table will show that from July 17, 1942 to July 22, 1942, inclusive, there was a gradual diminution in the total white count with an absence of nucleated white cells in the blood smears for two consecutive days. Daily transfusions were given and pentnucleotide continued with caution.

On July 24 the patient began to complain of pain in the area of injection. At this time a sharp rise in the total white blood count and also in the percentage of polymorphonuclears was noticed. The patient's general condition was much improved, the temperature dropped to normal, but therapy was continued for a few days in spite of the high blood counts. A week later, when marked infiltration of the left flank was present, an aspiration of 1 cc of fluid was made. The bacteriological examination revealed no organisms. No attempt to evacuate this "pus" was made because it was felt advisable to leave a reserve of white cells. A blood culture taken on August 5 was positive for streptococcus viridans. Neoarsphenamine was administered with increasing doses given intravenously three days apart, accompanied by a subjective improvement in general status.

On August 18 the left flank was aspirated and about 75 cc of brownish sterile pus was obtained, followed by a slight drop in the leukocyte count without appreciable changes in the percentage of polymorphonuclears.

A week later under local superficial infiltration a small incision was made through the center of the fluctuating area. The edges of the wound were spread with a Kelly forceps and more than 500 cc of sterile pus was evacuated. A rubber drain was inserted. Two successive examinations showed a decrease in the leucocyte count.

On September 3rd the patient's condition suddenly became worse. He began to complain of blurring of the vision and nausea. The pulse became weak and the respirations shallow. Stimulants were administered. On September 5th he had three convulsive seizures. He died suddenly the next day of cerebral embolism. No permission for a post-mortem examination could be obtained.

DISCUSSION

The importance of a close check on all patients receiving intensive therapy with the sulonamides is emphasized by the development of acute agranulocytosis in this patient in spite of daily alternate blood counts and sulfadiazine levels of the blood, daily injections of liver extract, and frequent transfusions, measures often used in the therapy of agranulocytosis.

The value of the production of a sterile abscess to mobilize leucocytes after maturation had been stimulated by adequate doses of pentnucleotide in the treatment of agranulocytosis has been questioned by Beckman (3). It may be of significance, however, that there occurred a sharp drop in the total white count when the abscess was evacuated. (chart).

Date 1942	RBC in millions	WBC	Poly's %	SI%	LL%	Mono %	Myel %	Hgb %	Sulfa. Level	Temp. Daily	Blood Trans. in cc	TREATMENTS
6-11	3'11	7650	78	19	2	1		60		100.3		
6-15									0.7	100		
6-16		9750						64		100.2		Sulfathiazole Blood Culture
6-17									5	99.3		positive for Strep. Viridans.
6-18		10650						60		100	500	
6-19									2.7	100		
6-20		10100						61		99.4		Sulfathiazole Stopped
6-22									6.4	100		Sulfadiazine & Soda Bicarb.
6-23		10400						64		100.2	300	Typh. & Para. Vaccine 0.2 cc
6-24									5.2	100.2		
6-25		11000						64		102		Typh. & Para. Vaccine 0.4 cc
6-26									4.1	99		
6-27		10800						64		100.2		Typh. & Para. Vaccine 0.5 cc
6-29	3'30	9800	82	13	2	3		64	5.4	100.2		Typh. & Para. Vaccine 0.6 cc
6-30										99	200	
7-1										100.2		Typh. & Para. Vaccine 0.8 cc
7-2									5	100		
7-3		6850						68		99.3		Typh. & Para. Vaccine 1 cc
7-4									5.1	100.2		
7-6		7900						64		99.1		
7-8										99.4		Typh. & Para. Vaccine 1.4 cc
7-9		8400						61		99.4		
7-10									5.3	99.3	250	
7-11		6200						68		100		
7-13									6	101.1		Blood Culture positive after
7-14		3500						67		101.3		four days incubation
7-15									6.5	101.4		
7-16		2350						58		102		Sulfadiazine discontinued
7-17		2400	6	82	8	4				102.1	250	Pentnucleotide 40 cc
7-18		2600	2	89	5	4				102.3	500	Turpentine 4 cc-Pentnucl. 10 cc
7-19		2250	0	88	6	6				103.1	150	Pentnucleotide 20 cc
7-20		1450	0	88	7	5				103.2	150	Pentnucleotide 20 cc
7-21										101.2		Pentnucleotide 20 cc
7-22	3'67	2850	22	64	7	6	1	75		102.4	200	Pentnucleotide 20 cc
7-23										101		Pentnucleotide 20 cc
7-24		8200	80	15	3		2			99	250	Pentnucleotide 10 cc } daily
7-27		10250	82	16	2					99		Pentnucleotide 10 cc }
7-29		15500	83	14	3					100		
8-8										99		Neoarsphenamine 0.15 gms.
8-11										100		Neoarsphenamine 0.30 gms.
8-13		7750	81	15	4					100.1		
8-14										100		Neoarsphenamine 0.45 gms.
8-17		11600	84	11	3	2				101		
8-18										100		75 cc pus removed Neo. 0.45
8-21		7200	79	17	4					99		
8-22										99.2		Neoarsphenamine 0.45 gms.
8-25		10000	87	9	2		2			99		550 cc pus evacuated
8-27										99.1		Neoarsphenamine 0.45 gms.
8-29		5500	84	16						99.3		
8-31										98.4		Neoarsphenamine 0.45 gms.
9-1		3850	74	22	2	2				98.3		

SUMMARY

The third case of acute agranulocytosis following sulfadiazine therapy is presented. This occurred in spite of adequate measures for its prevention. Pentnucleotide therapy, with induction of a sterile abscess, proved effectual in restoring the blood count to normal and improved the general status of our patient. Death was due to a cerebral embolism.

REFERENCES

1. M. Levin & F. H. Bethell: Fatal Granulocytopenia Developing During Administration of Sulfadiazine (Sulfanilamide Derivative), Univ. Hosp. Bull., Ann Arbor, 8: April, 1942.
2. John J. Curry: Acute Agranulocytosis following Sulfadiazine, J. A. M. A., 119: 1502, August, 1942.
3. Beckman: Treatment in General Practice, 4th edition. W. B. Saunders Co., 1942, p. 627.

ARMY'S 1943 PROGRAM

The 1943 recruiting program of the Surgeon General of the Army calls for the commissioning of 6,900 physicians and approximately 3,000 hospital internes and residents, it is reported in *The Journal of the American Medical Association* for March 13 in an outline of the new procedure of processing physicians, dentists and veterinarians for the Army. The program also calls for the commissioning of 4,800 dentists and 900 veterinarians.

Physicians will be procured from the following twenty states and the District of Columbia: California, Colorado, Connecticut, Illinois, Iowa, Maryland, Massachusetts, Minnesota, Missouri, Nebraska, Nevada, New Hampshire, New Jersey, New York, Ohio, Oregon, Pennsylvania, Rhode Island, Vermont and Wisconsin.

The following states have already contributed more physicians to the armed forces than the sum of their 1942 and 1943 quotas and will not be called on to furnish any more physicians, except internes and residents and except special cases for specific position vacancies, during 1943: Alabama, Arizona, Delaware, Georgia, Idaho, Kentucky, Louisiana, Mississippi, New Mexico, North Carolina, South Carolina, Tennessee, Texas, West Virginia and Wyoming.

It is stated that at present there will be no procurement of physicians, except internes and residents and in special cases for specific position vacancies, in those states not listed

above. There will be no procurement of dentists, except special cases for specific position vacancies, in the following sixteen states: Alabama, Arizona, Arkansas, Delaware, Florida, Georgia, Kentucky, Louisiana, Mississippi, New Mexico, North Carolina, Oklahoma, South Carolina, Tennessee, Texas and Virginia.

At the present time there are no restrictions on the recruiting of veterinarians.

In the instructions issued by the Army it is pointed out that the Surgeon General has discontinued all medical officer recruiting boards and that under the new procurement program no physician, dentist or veterinarian will be commissioned in the armed forces of the United States until he has been declared "available" by the Procurement and Assignment Service of the War Manpower Commission.

In each state the Procurement and Assignment Service has set up three state chairmen: medical, dental and veterinary. Each of these prepares a monthly quota list of physicians, dentists and veterinarians who are apparently suitable and who are available, for commissioning in the Army of the United States. This list is submitted to the central office of the Procurement and Assignment Service which sends a communication inviting such individuals to apply for service with the armed forces. On the reply card enclosed with the invitation the individual states his preference for the Army, Navy or Medical Department of the Air Forces. These reply cards are sent by the potential applicants to the state chairmen of the Procurement and Assignment Service who in turn submit lists of such potential applicants to the Officer Procurement Service of the Army.

On receipt of such lists the officer procurement district office contacts the potential applicant and arranges for an interview regarding a commission.

Applicants will be requested by the officer procurement district office to complete all papers and take all steps required of them within fourteen days of the date of such request. If this is not complied with, a report thereon will be transmitted by the officer procurement district office to the state chair-

men of the Procurement and Assignment Service.

The decision as to the grade and appointment to be recommended for each candidate rests with the Surgeon General, not with the Officer Procurement Service.

THE SUPREME COURT DECISION

By this time all should have read in the *Journal of the American Medical Association*, January 23, 1943, issue, page 267, the text of the opinion (U. S. Supreme Court) affirming guilt of two medical societies.

Since the final decision of the Supreme Court of the United States has been given in disposition of the suit against the District of Columbia Medical Society and the AMA charged with conspiracy to restrain in trade the activities of a Washington, D. C., Group Health Association formed to supply prepaid medical and hospital service to its membership, it is unnecessary to comment specifically on the Court's decision.

Many members of the AMA seem to be pleased that the unanimous opinion of the Court was written by a Pennsylvanian, a learned judge, not to be influenced by attitudes toward many New Deal policies which most physicians may have believed inspired the original prosecution.

Physicians will accept the dictum that they were in error as practitioners of medicine to dissociate themselves, by official action in their societies, from professional relationships with other physicians employed by insured groups to render professional service to subscribers.

It is said that the operation of Group Health Association attracts no attention from the practicing physicians in the District of Columbia. It is known that they advertised recently in the *Journal of the AMA* for physicians to accept appointments in their service, and that the total number of subscribers after its four or five years in business totals 3300, which seems an indifferent response from a city said to house more than 750,000 of government employees.

The experience of the combined non-profit limited medical service and hospital service in the State of Michigan under the control of the profession of that state has fared much

better, having at the present time in the third year of its existence 600,000 subscribers and more than 3000 participating physicians.

The physicians of California, Massachusetts, Michigan, New Jersey, New York and Pennsylvania, with their own plans now selling non-profit insured medical and hospital service to groups, will, no doubt, since receiving the opinion of the Supreme Court, develop an even more lively interest in the success of their own service plans.

In the meantime we should feel privileged to enjoy the widely publicized comments of others on some of the implications of the Court's decision.

An editorial appearing recently in the *Wall Street Journal* comments under the caption "With Clubs It's Legal." The editorial refers to a recent ruling of the Supreme Court of the United States to the effect that so far as Federal statutes go the requirement that a farmer or other producer hauling his produce into New York City shall be stopped to take on and pay a member of the local teamsters' union, is perfectly legal, and that the Federal Government could not interfere. Truck owners who have resisted paying this tribute have suffered damage to their vehicles and destruction of their cargoes, while the consumers in New York pay this union tribute in higher prices.

The editorial continues: "The organized physicians in the District of Columbia were charged with attempting to prevent the members of their association from accepting employment under the Group Health plan and to restrain hospitals from affording facilities to patients of physicians employed under the plan. The Supreme Court ruled that the organized physicians violated the Sherman Anti-trust Act." "

Continuing, the editorial states: "We do not raise the question as to whether the Court correctly interpreted the law in each case, but apparently the Washington physicians should have organized a union; the union officials then hire a group of pluguglies; these goons could then have beaten up the physicians who did not conform to union rules and they could have picketed the hospitals and refused to let supplies be taken to

(Concluded on Page 48)

Editorial

DELAWARE STATE MEDICAL JOURNAL

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Changes in manuscript after an article has been set in type will be charged to the author. THE JOURNAL pays only part of the cost of tables and illustrations. Unused manuscripts will not be returned unless return postage is forwarded. Reprints may be obtained at cost, provided request is made before publication.

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VOL. 15 MARCH, 1943 No. 3

FALSE POSITIVES

The matter of false positive serological reactions in the test for syphilis is usually dismissed in this latitude with the remark that malaria, yaws and leprosy are rare in Delaware. In the most competent hands modern serological tests provide from 0.2 to 1 per cent technical false positive results in known non-syphilitic persons. It is pre-supposed that any single positive reaction which is unsupported by history or clinical evidence will be checked in the same laboratory or another laboratory utilizing two or more different tests. A transient false positive reaction in infectious mononucleosis is of practical interest because of the not uncommon occurrence of that disease at present. Lynch, Boynton and Kimball⁽¹⁾ report 16 per cent false positive reactions in a variety of tests and with well controlled procedures among 263 persons following smallpox vaccinations. These reactions reached their peak from the

22nd to the 28th day following vaccination in the case of the Kolmer Wassermann and Kahn tests and in a few the reactions were still positive after four months. They are, therefore, not to be detected merely by repeating the test. With the recent local widespread vaccination of adults it is therefore natural that false positive Wassermann and Kahn reactions from this source have come to light in Wilmington and Baltimore. In Philadelphia, Favorite⁽²⁾, studying 202 individuals following vaccination found originally 9.4 per cent of false positives, and by reexamining later 30 of these individuals the false positives rose to 11.3 per cent, during a period of 57 days. Even the provocative test has been toppled from its pedestal with the confirmative work of Barnett and Kulcher⁽³⁾ showing syphilitic reagin in normal blood and a false positive provocative effect following intravenous injection of neoarsphenamine. Not yet in the literature are oral communications from staff members of two teaching institutions that, "patients convalescent from virus-pneumonia are showing a higher percentage of positive luetic serological reactions than the general population."

That these false positive reactions are of practical frequency is shown by the fact that Kahn is advocating a "Verification Test" which is designed to pick out the blood giving a positive serologic reaction unrelated to syphilis. Other serologists are attempting to develop the same type of confirmatory tests.

With the serological tests for syphilis in this status it is not surprising that states which have passed laws compelling premarital examination for syphilis have found that a considerable number of non-syphilitic persons are caused undue alarm, delay in marriage, and expense in unraveling the significance of false positive or doubtful results.

1. Lynch, Francis W. et al.: False Positive Serologic Reactions for Syphilis Due to Smallpox Vaccinations (Vaccinia), J. A. M. A., 117: 951, (Aug. 23) 1941.

2. Favorite, Grant O.: Effects of Smallpox Vaccination on the Serologic Tests for Syphilis, Phila. Med. 30: 853, March 13, 1943.

3. Barnett, C. W. et al.: Quantitative Provocative Reactions in Normal and Syphilitic Sera Following the Injection of Neoarsphenamine, Am. J. Syph., Gonorr. & Ven. Dis., 22: 712, (Nov.) 1938.

O. C. D. NOTICE**TO THE MEDICAL FRATERNITY OF
DELAWARE:**

New legislation has been enacted extending benefits, relief and medical care to workers involved in the United States Civilian Defense Corps, who are injured in test black-outs and air raids, as well as injury or death occurring from enemy action. In order to secure these benefits it is necessary that each person take the prescribed oath of office, which will be mailed to him, so he can be enrolled by the Personnel Office.

It is therefore requested that each physician sign the oath, reproduced below, and return it promptly to the Chief of Emergency Medical Service, State Council of Defense, 839 King Street, Wilmington, Delaware.

Oath of Office
Medical Division

State Council of Defense (O. C. D.)

I do solemnly swear (or affirm) that I will bear true faith and allegiance to the United States of America, that I will serve them honestly and faithfully against all their enemies whomsoever, and that I will obey the orders of the President of the United States and the orders of the offices appointed over me.

Sign
Approved
**CHIEF, EMERGENCY MEDICAL
SERVICE**

Please answer the following

Full Name
Place of Birth
Address
Phone No.
Name of Wife
No. of Children

Your prompt cooperation will be appreciated.

MEREDITH I. SAMUEL, M. D.,
Chief, EMS.

OBITUARY

AUGUSTUS H. BISHOP, M. D.

Dr. Bishop, the oldest practitioner of medicine in Delaware, died in the Kent General Hospital, Dover, on March 13, 1943, in his 91st year, following a heart attack a week

earlier. Despite his advanced years, he had been active in his practice until this attack.

Born near Fenwick, the son of the late Captain and Mrs. James Bishop, Dr. Bishop was graduated from the University of Pennsylvania Medical School in 1875. He began the practice of medicine and surgery with the late Dr. William P. Parvis at Leipsic, but soon located in Dover.

Dr. Bishop was a member of the Kent County Medical Society, the Medical Society of Delaware and of the American Medical Association.

He is survived by two daughters, Mrs. Helen B. Hughes, Dover; and Miss Elsie Bishop, New York; three grandchildren, Mrs. Dyre Bradford, Wilmington; Miss Louise Hughes, Dover, and William A. Hughes, Rehoboth Beach, and a great-grandson, William A. Hughes, Dover. Dr. James R. Bishop, Salisbury, is a nephew.

Funeral services were held on March 15, 1943, at his home in Dover, with interment in Christ Church yard. The officiating clergyman was the Rev. B. F. Thompson, assisted by the Rev. Paul A. Kellogg.

THE SUPREME COURT DECISION

(Concluded from Page 46)

them. In all of these activities they would have been immune from Federal prosecution. What reason is there to believe that Washington, where unions have such powerful friends, would be an exception?"

"Well," concludes the editorial, "at any rate the good doctors of Washington now know who constitute the 'underprivileged.'" —*Phila. Med.*, Feb. 27, 1943.

BOOK REVIEWS

The Anatomy of the Nervous System. By Stephen W. Ranson, M. D., Ph. D., formerly Professor of Neurology and Director of Neurological Institute, Northwestern University Medical School. Seventh edition. Pp. 520, with 408 illustrations. Cloth. Price, \$6.50. Philadelphia: W. B. Saunders Company, 1943.

This text continues its work for the medical student as a soloist in this field. Rare is the student who prides himself on his knowledge of brain anatomy, but when he is asked a question on the subject his mind automatically goes back to Ranson's where an illustration in this well-known text may or may not

come to his imaging faculties to prevent his lowly reputation as a knower of intellectual anatomy from sinking to a new low. In this edition the material has been thoroughly revised and brought up to date. The cuts and illustrations are excellent. The writer has made every effort to simplify the description of this subject. Science today is more than ever correlating brain anatomy with psychology, neurology, and psychiatry, and more and more the grey-haired clinician finds himself going back to basic texts in brain anatomy and physiology. Ranson's book is invaluable for this purpose.

Textbook of Clinical Neurology. By Israel S. Wechsler, M. D., Clinical Professor of Neurology, Columbia University. Fifth edition. Pp. 840. Cloth. Price, \$7.50. Philadelphia: W. B. Saunders Company, 1942.

This practical manual is a valuable and handy work for quick reference or more detailed study. It is systematic, well arranged, accurate and brief. The text has been thoroughly revised to include the essential findings and recent work in this field. The chapters dealing with interpretation of signs and symptoms, psychometric tests, and history of neurology add much to make this work interesting and instructive. The chapter on injuries of the brain does its part to convince the reader that a person may suffer severe injury to the brain without brains, bone, and blood being scattered all about the scene of the accident. An excellent book for the busy medical student and physician.

Orthopedic Subjects: Military Surgical Manuals, Volume IV. Edited by George E. Bennett, M. D., Chairman. Pp. 305, with 79 illustrations. Cloth. Price, \$3.00. Philadelphia: W. B. Saunders Company, 1942.

Burns, Shock, Wound Healing, and Vascular Injuries: Military Surgical Manuals, Volume V. Prepared under the auspices of the Committee on Surgery. Pp. 272, with 82 illustrations. Cloth. Price, \$2.50. Philadelphia: W. B. Saunders Company, 1943.

These two volumes are part of a series of six, prepared by the Committee on Surgery of the Division of Medical Sciences of the National Research Council. Being military manuals the stress is naturally on treatment, as agreed upon by the respective subcommittees,

composed of outstanding authorities in their respective fields. These texts therefore are authoritative, up to date, and non-controversial. Furthermore, they are concise, and therefore meaty. Like the others that have appeared in this series they are heartily recommended to practitioners interested in their respective fields.

Nutrition Yardstick. Prepared by the National Live Stock and Meat Board. Pp. 24. Paper. Price, \$1.00. Chicago: National Live Stock and Meat Board, 1943.

This is a graphic calculator for measuring the food value and adequacy of daily diets, and consists of an ingenious arrangement of pull slides and tables from which are obtained the total daily values of the protein, calories, minerals, and vitamins. It is easy to understand, simple to work and gives accurate results, and is approved by the Council on Foods and Nutrition of the A. M. A. Quicker than the ordinary tables alone, it will be of value to physicians, dietitians, nurses, and to those laymen charged with the duty of accurate appraisal of their diets.

The Reichert Collection—Handbook. 72 Pp., with 8 illustrations. Paper. Price gratis. New York: Burroughs Wellcome & Company, 1943.

This is a Handbook on the Reichert Collection, illustrative of the evolution and development of diagnostic instruments and techniques in medicine. The Collection itself is now on view as a loan exhibit at the Wellcome Exhibition Galleries.

The Handbook deals with sphygmography, sphygmomanometry, auscultation, microscopy, and endoscopy, and, because of its completeness and detail in tracing the evolution of diagnostic instruments, is a valuable contribution to the subject. It is designed for use by students, libraries, museums and other agencies, and physicians who are interested in the historical aspects of the development of the instruments and techniques of physical diagnosis. The distribution of the Handbook is complimentary but will be limited to members of the medical and allied professions.

1789—MEDICAL SOCIETY OF DELAWARE—1943

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Meets Third Tuesday

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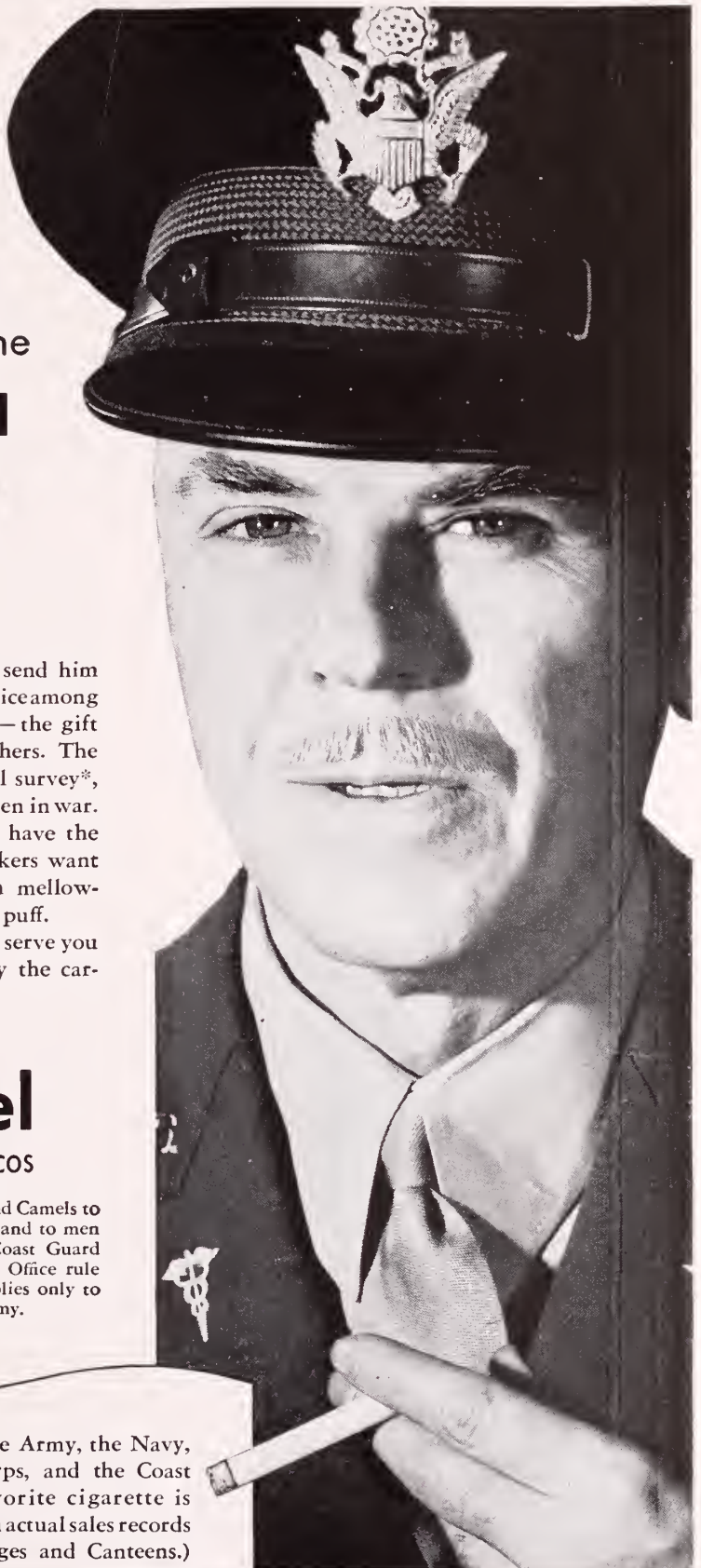
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LITTRE'S UMBILICAL HERNIA †

Case Report

W. EDWIN BIRD, M. D.*

Wilmington, Del.

Two years ago the author reported on the subject of "Right Paraduodenal Hernia," adding the forty-seventh case to the literature of that subject. A few months ago we encountered a case that presented an unusual and perhaps unique picture of one variety of the condition known as Littre's hernia.

In 1700, Alexis Littre recorded two cases of inguinal hernia in which an intestinal diverticulum or pouch of some sort was the sole occupant of the sac. The possibility of this condition had been suggested first following an autopsy in 1683 by Frederik Ruysch, a famous Dutch anatomist and atlas maker. Littre described these pouches as secondary formations; he thought they resulted from traction on the part of the gut within the sac and hence regarded them as partial enteroceles. Lesions of this latter type were accurately described in 1777 by August Gottlieb Richter in a treatise on hernia which is still an acknowledged classic, and this type of hernia—partial herniation of the anti-mesenteric portion of the gut—is today still catalogued as a Richter's hernia though it had been observed earlier (1772) by Johann Casper Lavater.

In 1809, Johann Friedrich Meckel** was the first to classify the different varieties of

intestinal diverticula. The most important of these and the one to which his name has been given, is that which represents an incomplete obliteration of the omphalomesenteric or vitelline duct. With this diverticulum situation clarified, a review showed that the lesion which Littre had described over a century before was a Meckel's diverticulum alone in a hernial sac. Riecke, having observed a strangulated femoral hernia of Meckel's diverticulum in 1834, was the first in 1841 to suggest calling them Littre's hernias.

Considerable confusion exists in the literature over these three clinical entities: (1) Richter's hernia—a partial enterocoele; (2) Littre's hernia—a hernia of Meckel's diverticulum alone, and rarer than (3) and (3) mixed Meckel's hernia—a hernia of Meckel's diverticulum, plus gut or omentum, or both.

Just why Littre's should be rarer than Meckel's nobody has explained. Perhaps it is due to the fact that a diverticulum has no propulsive or expansive characteristics, whereas gut and omentum have both. The chances are the gut or omentum arrived in the sac first and the diverticulum followed, not by adhesive but by cohesive traction.

Speaking of confusion, Moschowitz, in Johnson's "Operative Therapeutics" (1915), clearly distinguishes between a Richter's hernia and a Littre's hernia; whereas Stone, in Lewis' "Surgery" (1929), shows an illustration labelled "Littre's or Richter's Hernia" (which is definitely a Richter's hernia), and he repeats the statement in the text. It is unfortunate that such a popular reference work carries the implication that a Littre's hernia and a Richter's hernia are one and the same thing.

As to Littre's hernia, Babcock defines it as "a sac containing a blind diverticulum only, such as Meckel's diverticulum or the appendix vermiformis," whereas the blind

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** This Meckel, according to Garrison, came of a famous medical family. His grandfather, of the same name, graduated from Goettingen in 1748, at the age of twenty-four, his thesis being on the (Meckel's) sphenopalatine ganglion of the fifth cranial nerve. Three years later he was Professor of Anatomy, Botany and Obstetrics (*wie!*) at Basle. His father, Philipp Friedrich Theodor Meckel, graduated from Strassburg in 1777, at the age of twenty-one, his thesis being on the inner ear, and two years later he was Professor of Anatomy and Surgery at Halle. His brother, August Albrecht Meckel, at thirty-one, became Professor of Anatomy and Forensic Medicine at Bern. Our Meckel became Professor of Pathology, Comparative Anatomy and Embryology at Halle. Thus this family, in three generations, produced four professors, all before they had passed their thirty-first year.

diverticulum that Littre described was a vitelline duct vestige and not the appendix, though this is another vestigial organ. Keeley states that the sac may also contain "small or large intestine, and/or omentum," and Watson, an acknowledged authority on hernia, says it "may be accompanied by small intestine . . . or omentum alone," a statement reiterated by DaCosta. However, Weinstein's recent paper (December, 1938) on Littre's femoral hernia brings us back again to the original basis when he says "that the title of Littre's hernia is applied only if the diverticulum is of Meckel's type, and is the sole occupant of the hernial sac."

It is not our purpose here to go into lengthy descriptive details concerning Meckel's diverticulum, as Goodman's excellent article covers the ground thoroughly. Suffice it to say that normally the vitelline duct begins to atrophy at the seventh week of fetal life, is completely obliterated by the twelfth week, and at birth no remnant is visible. Failing to perform according to schedule, there may be present at birth anything from a mere nubbin of a closed pouch (generally on the anti-mesenteric border of the gut, generally without a mesentery, and at a point 12 to 36 inches from the ileocecal valve) to a continuous open tube extending from the ileum to the umbilicus and discharging feces. Consequently, the shape and size, and the mobility or fixation of Meckel's diverticulum varies within quite large limits.

A Meckel's diverticulum is subject to all the lesions that obtain in other parts of the gut: inflammation, ulcer, hemorrhage, foreign body, tumor, obstruction, strangulation, gangrene, torsion or volvulus, intussusception (in approximately 25 per cent of the reported cases), and herniation (in another 25 per cent). Herniation of the mixed Meckel's type or of the true Littre's type is possible at any of the sites of external herniation of the abdomen, and the following varieties have been reported: inguinal, femoral, umbilical, ventral (incisional), crural and sciatic. We could find no record of any case of the following types: spontaneous ventral, diaphragmatic, obturator or lumbar. Of the many possible types of internal herniation only one case has been recorded, a retrocecal hernia.

Littre's own description of his cases can, after more than 200 years, be read today without modification other than the knowledge that he was describing a hernia of Meckel's diverticulum and not, as he supposed, of what is now termed a Richter's hernia. Witness his accurate remarks on the diagnostic features, as given by Mason:

"The diagnostic signs, making this type of hernia recognizable before the operation, are:

"1. The patient goes to stool during the whole course of the illness as, the intestinal canal being uninterrupted, the excrements are at perfect liberty to pass from one end to the other.

"2. The patient has no hiccough, or very occasionally.

"3. He does not vomit, at least by comparison less frequently than in ordinary herniae. The vomitus is never fecal matter.

"4. The patient's belly is never flat, stretched or full of wind as in ordinary herniae.

"5. The tumor in the groin is formed more slowly and never becomes so large.

"6. The inflammation, fever, pain or other symptoms which may accompany this peculiar kind of hernia, are less severe and take longer to manifest themselves than in other herniae.

"The diagnostic signs which make this particular hernia recognizable during the operation are:

"1. In ordinary cases of hernia, the entire circumference of the intestinal body is engaged in the hernial sac. In this hernia there is only one part in the sac.

"2. The portion of the intestine which forms an ordinary hernia is found doubled in the shape of an arc in the sac. In this particular kind (which concerns us), this portion is single, situated perpendicularly and terminated by a very distinct end.

"3. An ordinary hernia is often formed by intestine and omentum together. This particular kind is always made by the intestine alone."

Operation on an uncomplicated Meckel's diverticulum has a mortality rate slightly above that of appendectomy, i. e., 3 to 5 per cent. If the diverticulum is diseased but *not*

herniated, the rate runs as high as 35 to 40 per cent. If the diverticulum is diseased and is herniated, the operative mortality extends from 45 to 50 per cent.

In diverticular hernia, the inguinal variety is commonest, being two and one-half times as frequent as the femoral or the umbilical types. Following the rule in simple hernia, in the femoral variety females outnumber the males 3 to 1; whereas in the inguinal variety exactly the reverse is true. In both of these the majority are on the right side, and most of the cases are in adults and the middle-aged. (Parenthetically, we might add that Richter's hernia is commonest in the femoral region.) In the umbilical variety sex is stated so infrequently that no reliable figures are available. Age, however, is definitely a factor, over 85 per cent being found in the newborn or in very young infants.

There is a marked discrepancy between the anatomical and the surgical occurrence of Meekel's diverticulum, due to the fact that the pathologist explores the entire abdomen, while the surgeon usually explores only a limited area of the abdomen. Anatomically, Meekel's divertienlum is found in 1/2 to 2 per cent of humans, according to various post-mortem observations. The surgical incidence seems to be considerably less, about one-tenth, and varies from one case in 700 laparotomies at the Mayo Clinic, to one case in 450 at the Vanderbilt University Hospital, to one case in 400 at the New York Post-Graduate Hospital, an average of one case in 500 laparotomies. Further, Forgue and Riche, in 1907, analyzing 600 cases of Meekel's diverticulum, found that fifty-two (8.7 per cent) or about one in twelve occurred in hernias. On this basis one might anticipate encountering some type of Meekel's hernia once in 6,000 laparotomies. Finally, our own tabulation shows that 20 per cent of Meekel's hernias are umbilical, and at this rate one might antieipate encountering a Meekel's umbilical hernia once in 30,000 laparotomies, surely an astronomical expectancy. True Littre's hernias are even rarer.

TABLE I
REPORTED CASES OF MECKEL'S DIVERTICULUM
IN A HERNIA

Type	Summary			
	Gray 1934	Bird 1941	Total	Per Cent
Inguinal	89	6	95	52.19
Femoral	33	4	37	20.33
Umbilical	37	1	38	20.88
Ventral (incisional)....	0	1	1	0.55
Crural	0	1	1	0.55
Sciatic	1	0	1	0.55
Retrocecal	1	0	1	0.55
Not stated	8	0	8	4.40
Total	169	13	182	100.00

Simple congenital umbilical hernia is rare enough, and occurs about once in every 10,000 births. Such a hernia, containing a diverticulum, is considerably rarer. The number of cases of Meekel's diverticulum in a hernia, tabulated up to February, 1934, by Gray, was 169, of which only 37 were of the umbilical variety. To this 169 we have been able to add twelve non-umbilical cases, and our present umbilical case, the first since 1928, and which makes the thirty-eighth case to be reported. Several of the cases tabulated were of the mixed Meekel's type. We have not yet been able to determine the exact number of true Littre's hernias on record.

CASE REPORT

The patient was a male, colored baby, born of an eighteen-year-old unmarried mother, para II, on March 17, 1941, at the Wilmington General Hospital. The baby weighed 6 pounds 12 1/2 ounces, and appeared to be physically normal in all respects. There was no apparent enlargement (Fig 1) of the umbilical end of the cord, which was tied off in the usual manner. On the third day the cord was red and had a slight purulent discharge, and on this day the Pediatric Department was called in to supervise the feedings, etc. On the fourth day the cord sloughed off (Fig. 2), and later that day some feces were passed via the umbilicus. On the fifth day

a loop of gut or a pouch began to present at the umbilicus (Fig. 3), and by the sixth day

diameter and extending 2 inches to end blindly. The extra-abdominal portion of the sac

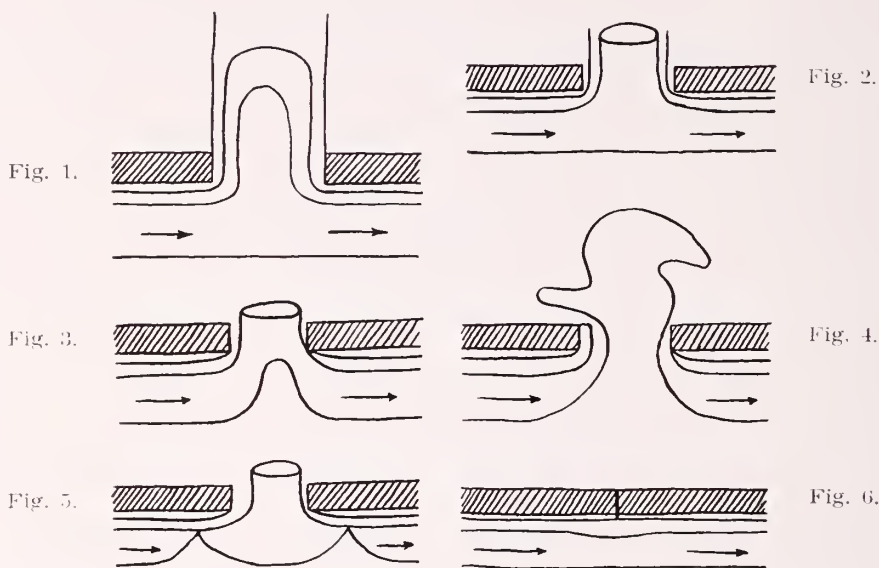


Fig. 1. The anatomy at birth, showing an apparently normal cord but containing an unsuspected hernia sac into which protrudes a Meckel's diverticulum.

Fig. 2. Fourth day, showing the cord, hernia sac and the diverticulum sloughed off at the point of ligation.

Fig. 3. Fifth day, showing the beginning of the eversion of the mesenteric border of the gut through the opening in the diverticulum.

Fig. 4. Seventh day, showing the eversion completed and the main pouch with its two secondary pouches. The presenting surface was, of course, mucosa. At operation, on the twenty-fourth day, the two lateral openings, mistaken for fistulas, were sutured.

Fig. 5. At operation after the eversion was reduced it was discovered that the two sutured "fistulas" had been converted into two complete obstructions. The eversion was then re-established, as in Figure 4, and the offending sutures removed.

Fig. 6. The operation completed, showing the lumen of the gut approximately normal in diameter.

this extended $3\frac{1}{2}$ inches on to the abdominal wall.

On the seventh day the Surgical Department was called in consultation. The weight was then 5 pounds 15 ounces. Our examination showed a pouch of intestine on the abdominal wall (Fig. 4) some 5 inches long and $2\frac{1}{2}$ inches in diameter with a blind end. From the right side of this pouch was a secondary pouch, arising $1\frac{1}{2}$ inches from the umbilicus with a diameter of $\frac{1}{2}$ inch, and extending 2 inches to end blindly. From the left side near the distal end of the main pouch was another secondary pouch nearly 1 inch in

(peritoneum) was missing. On palpation the pouch felt as though it contained omentum; there were no gurgles. The neck of the pouch was adherent to the umbilical ring, which was $\frac{3}{4}$ inch in diameter, and from the left side of the ring feces were passing through a small opening. The main pouch could not be reduced because of edema and the adhesions, nor could it be pulled out further. The flow of feces accounted for the progressive loss of weight and the absence of symptoms of obstruction; as a matter of fact, stools were also passed through the rectum daily both before and after operation.

The surface of this trilocular pouch appeared to be mucosa but a differentiation between mucosa and peritoneum with massive granulations could not surely be made. However,

to wait a few days in an effort to build up the patient. Unfortunately, the baby lost ground steadily and on the twenty-fourth day the weight was only 4 pounds 13¼ ounces,

TABLE II
REPORTED CASES OF MECKEL'S DIVERTICULUM IN A HERNIA
Tabulation

Report No.	Author	Date	Cases	Inguinal	Femoral	Umbilical	Ventral (Incisional)	Crural	Sciatic	Retrocecal	Not Stated
1	Pabst	1910	123	66	24	25	0	0	0	1	7
2	Wellington	1913	27	14	2	10	0	0	0	0	1
3	Burianek	1913	1	0	1	0	0	0	0	0	0
4	Harf	1919	1	0	1	0	0	0	0	0	0
5	Quenu	1921	1	1	0	0	0	0	0	0	0
6	Bettman	1921	1	1	0	0	0	0	0	0	0
7	Ludbrook	1922	1	0	1	0	0	0	0	0	0
8	Brodnax	1924	1	0	0	0	0	0	1	0	0
9	Lanman	1924	1	1	0	0	0	0	0	0	0
10	Littler	1924	1	0	1	0	0	0	0	0	0
11	Harrington	1926	1	0	1	0	0	0	0	0	0
12	Bianchi	1927	2	1	0	1	0	0	0	0	0
13	Oliva	1927	1	1	0	0	0	0	0	0	0
14	Sicard	1928	1	0	0	1	0	0	0	0	0
15	Reid	1928	1	1	0	0	0	0	0	0	0
16	Pollidori	1930	2	2	0	0	0	0	0	0	0
17	Sweet	1930	1	0	1	0	0	0	0	0	0
18	Donati	1931	1	0	1	0	0	0	0	0	0
19	Gray	1934	1	1	0	0	0	0	0	0	0
20	Sinclair	1922	1	0	1	0	0	0	0	0	0
21	Folliasson	1932	1	1	0	0	0	0	0	0	0
22	Mason	1933	1	0	1	0	0	0	0	0	0
23	Ittzes	1934	1	1	0	0	0	0	0	0	0
24	Bettinelli	1935	1	1	0	0	0	0	0	0	0
25	May	1935	1	1	0	0	0	0	0	0	0
26	Rodnaev	1936	1	1	0	0	0	0	0	0	0
27	deTroyeret duBourguet	1937	1	1	0	0	0	0	0	0	0
28	Keeley	1937	1	0	0	0	1	0	0	0	0
29	Quiri	1938	1	0	0	0	0	1	0	0	0
30	Weinstein	1938	1	0	1	0	0	0	0	0	0
31	Ringo & Charlton	1940	1	0	1	0	0	0	0	0	0
32	Bird	1941	1	0	0	1	0	0	0	0	0
Total			182	95	37	38	1	1	1	1	8
Per cent			100	52.19	20.33	20.88	0.55	0.55	0.55	0.55	4.40

Tabulation of Reports Nos. 1 to 19 after Gray; Nos. 20 to 32 by the author.
No. 20, Sinclair's case, contained also a Richter's hernia, the only combined case in the literature.

a tentative diagnosis was made as follows: congenital umbilical hernia, sac contents either cecum and appendix or Meckel's diverticulum; fecal fistula. Operation was advised and accepted by the family. In consultation with the pediatrician it was decided

a loss of one-third of the birth weight, and operation was decided upon as a matter of necessity.

On April 10, 1941, under novocain anesthesia the abdomen was opened below the umbilicus where nothing was noted. On en-

larging the incision up to the umbilicus two loops of ileum seemed to enter the ring from within. The left external opening through

opening made by the sloughing off of the top of the cord and of the parietal peritoneum. On passing a soft catheter proximally and



Fig. 7. The patient in the recumbent position.

which feces were still passing was then sutured, as was a similar opening on the right side, following which the neck of the pouch was freed of its adhesions to the ring. Then

distally it was found that the two sutures we had placed had very neatly closed (Fig. 5) the lumen at both points. The eversion was then re-established, the two sutures removed and the pouch inverted once more.

The picture then was that of a Meckel's diverticulum with a base of $1\frac{1}{2}$ inches and a height of $\frac{3}{4}$ inch to the opening made by the sloughing. How much greater the original height had been is a matter of conjecture, probably another $\frac{3}{4}$ inch. The remaining part of the diverticulum was then excised, the ileum sutured longitudinally with two rows of fine silk, leaving a lumen of approximately normal diameter. The diverticulum was 12 inches from the ileocecal valve. The umbilicus was then excised and the hernia repaired quickly by longitudinal suturing (silk, Pagenstecher, dermal) without drainage (Fig. 6). Just before closing the peritoneum 150 cc. of Ochsner's papain solution was run into the abdomen as a protection against colon bacillus infection. For the final stages of the closure a few whiffs of vinethane were given. The patient was returned to the ward in fairly good condition.

The pathological report stated that the diverticulum contained no gastric, duodenal, pancreatic or other heterotopic tissue.

Postoperatively, the baby did fairly well for three days, gaining 5 ounces in weight. On the fourth day it developed a pneumonia in the left lower lobe and succumbed on the sixth day at the age of thirty days. The autopsy, in addition to the left pneumonia,



Fig. 8. The patient in the upright position.

on pushing the main pouch back into the abdominal cavity it suddenly turned outside in, and it was apparent that it had been the mesenteric side of a Meckel's diverticulum completely everted by passing through the

showed a beginning pneumonia in the right lower lobe. There was a moderate degree of plastic peritonitis at the operative site, which probably represented an infantile reaction to the papain solution, the adhesions of which were easily separated. Also, the liver showed extensive fatty degeneration.

SUMMARY

1. Meckel's diverticulum in a hernia is discussed and the recorded (182) cases tabulated to date.

2. Littre's hernia is differentiated from the lesions with which it is confused.

3. A new case of the umbilical variety of Littre's hernia is reported, and its operative rarity estimated.

4. The case presented, the thirty-eighth in the literature, is perhaps unique.

CONCLUSIONS

1. Hernia of the umbilical cord is so rare that its possible presence is usually not suspected at delivery.

2. The sequelae of such an unsuspected hernia may be fatal.

3. In the absence at birth of physical findings indicating such an anomaly, there is no sure or even satisfactory method of preventing an accident.

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THE DOCTOR OF MEDICINE AND HIS RESPONSIBILITY †

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Members of the North Central Medical Conference, representing the states of North Dakota, South Dakota, Minnesota, Wisconsin, Nebraska, and Iowa, have entrusted me with the responsibility of addressing this National Conference on Medical Service concerning medical problems that are of both local and national interest.

It is the duty of every doctor of medicine to prevent illness, to supply adequate medical care to those who are ill, to perpetuate the science of medicine, and to encourage medical investigation. It is true that the average physician would prefer to go unregimented among his sick and administer to their needs, irrespective of race, color, creed, or financial status, rather than busy himself with administrative and political problems. However, since the courts have ruled that group health is a business and have found that medical societies are guilty of restraining trade when attempting to maintain the standards of the practice of medicine, a challenge has been issued to the medical profession: Is there a necessity for lay groups and the Federal government to take over the control of the practice of medicine?

Has the science of medicine reached its zenith? Have the men and women of medicine become so decadent that they are unable to assume their responsibilities? Are the doctors of medicine no longer able to conduct their practice without government control? Do they lack ability to appreciate their problems? Or are they incapable of constructive leadership in the solution of the numerous responsibilities that are confronting the medical profession today? The reply is, "No."

The science of medicine has been nurtured by men and women who have advanced the knowledge of relieving pain, correcting deformities, lowering infant mortality, prolong-

ing life and preventing illness by sanitary and public health measures. This progress must continue if civilization is to survive.

The medical profession is conscious of social and economic changes and stands ready to co-operate with, and offer leadership to, state and federal agencies in the solution of medical problems. It further believes that better medical service can be rendered by offering advice and leadership to welfare agencies than by serving as a tool under political bureaus.

The medical profession recognizes the necessity of state and federal control of communicable diseases and medical services to inmates of state and federal institutions. It appreciates its responsibility to the Armed Forces and expects to supply the needed personnel. It is willing to co-operate with welfare agencies in providing adequate medical care for the low income and indigent groups of the population; but in providing this care, it believes that the medical service is augmented when the patient-physician relationship can be maintained by permitting the patient, whenever possible, to choose his own physician. In order to protect the public from worthless, so-called medical procedures and unnecessary operations by unscrupulous individuals, it likewise believes that high standards of medical education and practice must be maintained. This applies not only to the practice of medicine in the office; it applies to the practice of medicine in the humble home or in the most modern hospital.

Although medical education begins in the medical school, it is never completed as long as the physician continues his practice. Medical schools have adopted standards of education and have required certain courses of study in order that the public might avail itself of the best practices of medicine. Medical licensing boards have further protected the public by requiring of their candidates for licensure prescribed courses of study. State laws governing the practice of medicine and conduct of physicians further protect the public from irregular practices and charlatans.

Medical societies, county, state, and national, have been organized to further the

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* Professor of Neurology, University of Minnesota Graduate School of Medicine.

education of the physician by acquainting him with the advances and new discoveries in the science of medicine. They likewise serve as administrative units in the consideration and solution of medical problems. It is obvious that the responsibilities of the respective state organizations are greater than those of the county organizations, and that the national organizations is charged with greater responsibilities than those of the state organizations. However, it is also obvious that the activities of all groups must be integrated if medical problems are to be solved effectively. In some states, such as Minnesota, the administrative and the legislative bodies have the confidence of the medical profession. Likewise the medical profession has the confidence of the state administrative and legislative bodies. This confidence has made it possible for representatives of both groups to attack and solve the medical problems which are of mutual interest.

The national organization, through its respective bodies and committees, has conducted an excellent program in furthering medical education. It has crystallized the standards of medical education for the medical student as well as for the practitioner of medicine; it has investigated the claims of new and non-official remedies, foods and therapeutic measures and has further protected the public by approval or disapproval of the articles investigated. It has taken active steps through its Procurement and Assignment Committee in providing medical men for the Armed forces without robbing communities of adequate medical personnel and has made provisions for relocation of physicians where more medical service is needed. It has acquainted the public with the important role that the science of medicine plays in their daily lives, but apparently it has not gained the confidence of the national administrative and legislative bodies that some of the state medical societies have attained. The National Physicians' Committee has made some progress in acquainting the public with the necessity of medical science, but it too had not obtained the confidence of the national administrative and legislative branches of our government. Therefore, the recent court decision has emphasized the weakness of conducting a pro-

gram of education to acquaint the public, the administrative and legislative bodies of certain states, and the national institutions with the important function of the science of medicine in our civilization. It is our duty, as physicians and citizens, to assure those in administrative position and legislative bodies that we are familiar with the social and economic changes that have thrown greater responsibilities on the medical profession and that we stand ready to co-operate with these agencies in offering leadership in the solution of the numerous problems which nonmedical personnel are trying to solve.

The chief medical problem that concerns doctors of medicine and welfare agencies is that of providing adequate medical care to those who are financially unable to procure this care. This group includes those who are indigent and those with low incomes. Medical care, in its true sense, embraces more than emergency treatment for a particular illness, since it should include a rehabilitation program, such as the correction of deformities and ailments that impair the efficiency of individuals. The rehabilitation program also should include adequate and proper diets, physical training, recreation, protective clothing and housing. In most of the cities the indigent are provided with proper medical care through the charity hospitals, where competent physicians give of their services. This same group in the rural districts is not always so fortunate, since local welfare boards are reluctant to provide this care. It is in these situations that the physicians have been overburdened in assuming all of the responsibilities in providing the necessary medical care. Prior to the more recent economic changes, physicians were willing to assume this obligation because those who could afford to pay for professional services attempted to meet their obligations. However, as a result of the recent social and economic changes, the Government has taken over more and more control of the civilian's activities, and those with moderate and low incomes have been less willing to assume their obligations of medical care and are insisting that it is the Government's duty to provide medical care and that it is the indi-

vidual's privilege to squander his extra change.

The problems of this group cannot be solved by physicians alone or by federal, state, and local welfare agencies alone. Ours is a joint responsibility. Conscientious leadership by physicians working in co-operation with county, state and federal agencies can and will bring forth a solution of the problem. Medical service must be rendered, and the physician is willing to give a good portion of his services. But the government must provide reasonable funds for the care of its indigent, as it must provide for catastrophic illness in the low income group. Nevertheless, those who come within the low income group should likewise be made to realize that they too owe a responsibility to their local, state and federal governments and should be encouraged and advised in budgeting their income and expense.

Industrial compensation has accomplished much in providing proper medical care and the necessities of life, during illness, for those employed in industrial institutions. However, there still remain a large group of individuals who receive moderate or low incomes and are desirous of securing the assurance of adequate medical service in the event of illness. Insurance companies have offered this protection through policies covering accident and illness disabilities, but again this protection only partially solves the problem, since many an insuree expects more for his premium than the insurer is able to give. In several states medical societies have attempted to develop medical service plans whereby the insuree may purchase from the doctors within the group full medical protection or medical protection for unexpected, serious illnesses. In some states under the farm security program, experimental medical service plans are being tested out by use in an attempt to find the solution of the problem of supplying medical care to the farmers and their families who are being rehabilitated. In some states physicians are hired to render medical service to indigent and co-operative groups. Even though physicians, welfare agencies and low income groups are struggling with the problems of medical service plans, as yet a satisfactory plan for all classes

has not been developed. The recipients expect more than the vendors can supply for the premiums paid.

These controversies give rise to discussions on the necessity of compulsory medical insurance. Should such a program evolve, results would be disappointing from the patient's as well as the physician's points of view if placed under the control of political bureaus, and the patient would be deprived of his free choice of physician.

Therefore, we as physicians believe that a more equitable solution of the perplexing medical problems referred to will be reached if we are permitted to consult and advise administrative officials, legislative bodies, and welfare agencies, since we are more familiar with the medical needs of our respective communities than are those who have casual knowledge of the medical necessities.

It is befitting to quote the statement found in the opinion written by Justice Miller, of the United States Court of Appeals, of the District of Columbia, in the case of the United States of America versus the American Medical Association, and the case of the United States of America versus the Medical Society of the District of Columbia. (The italics are mine.)

"It may be regrettable that Congress chose to take over in the Sherman Act the common law concept of trade, at least to the extent of including therein the practice of medicine. Developments which have taken place during recent decades in the building up of standards of professional education and licensure, together with self-imposed standards of discipline and professional ethics, have, in the belief of many persons, resulted in substantial differences between professional practices and the generally accepted methods of trade and business. As we pointed out in our earlier decision, the American Medical Association and other local medical associations have undoubtedly made a profound contribution to this development. *However, our*

task is not to legislate or declare policy in such matters, but rather, to interpret and apply standards and policies which have been declared by the legislature. That Congress did use the common law test there is no doubt. That Congress was not otherwise advised was perhaps because of the failure of the professional groups to insist upon the distinction and to secure its legislative recognition."

Does the medical profession of this country need a stronger invitation, or a more direct challenge to take an intelligent, helpful and fair stand in the enactment of legislation that not only concerns the public welfare but the welfare of medicine itself? Does not the medical profession of this country, as citizens and taxpayers, have a right to express its opinion in these matters before legislation is enacted and rules and regulations adopted by some bureau? I do not share the opinion that the time for the medical profession to speak up is after such things have taken place. Neither do I have the opinion that Congress would be resentful of intelligent, courageous and fair advice on such matters. What better proof can be asked than the quotation from Justice Miller's opinion that the Court is not responsible for the absence of advice from the medical profession when Congress is drafting a law?

It is not the purpose of this paper to criticize the efforts of our national medical organizations nor to criticize the efforts of the National Physicians' Committee, but it is the desire of the members of the North Central Medical Conference to express a wish that a more active program be conducted to acquaint the public, government officials, and legislative bodies with the necessity of medical science and the important role it plays in our civilization. It is essential that we as physicians dispel the fear that government administrative agencies and legislative bodies have of our medical organizations and that they be assured of our cooperation in solving the social and economic problems that confront us as a nation.

The functions of acquainting the public on matters of medical interest, assisting bureaus in formulating plans on medical care and offering constructive advice on proposed medical legislation rightfully belong to the national organization known as the American Medical Association. They could be assigned to the National Physicians' Committee, or they might even be undertaken by unifying the activities of the various state committees on public policy and legislation. Representative committees could be appointed for each of the component societies, county, state, and national. These could all be so integrated that national opinion and advice could be obtained and made available for committee hearings on legislation within a few hours' time. Through the national, state, and county committees the entire profession could be informed of proposed medical legislation. Thus, the local constituents of the respective state and federal legislators could express their views before legislation is enacted. Some states already have medical advisory committees from each county. They also have state medical committees on public policy with a physician as part-time executive chairman, assisted by legal counsel. A national committee constructed on the same plan as these state committees would have to be created. A physician who has practiced medicine should be chosen as the executive chairman. Both he and his legal counsel would need to be stationed in our national capital. The expense of the national committee on public policy could be financed by one of three agencies, the American Medical Association, the National Physicians' Committee, or the respective state organizations bearing the expense jointly. It would appear more equitable if each physician would be assessed each year for the specific purpose of maintaining a national committee on public policy and legislation.

Our problems are not unlike those of dentists and hospital associations. Therefore, unified effort of medical, dental, and hospital associations should further the welfare of the patient.

SOCIAL INSURANCE

In a recent address before the Kings County Medical Society,¹ Mr. Louis H. Pink said in part, commenting on the *Beveridge Report*:

"Sir William makes it clear that his plan for freedom from want is based upon very important prior considerations, which have not been sufficiently stressed in this country.

"That the world after the war is a world in which the nations set themselves to cooperate for production and peace, rather than to plotting for mutual destruction by war, whether open or concealed.

"That the readjustments of British economic policy and structure that will be required by changed conditions after the war should be made, so that productive employment is maintained."

"Increasing the number of persons covered and the amount of benefits, provided such broadening is based upon long-term ability to pay, need not be postponed until after the war. But, standing alone, increased insurance coverage cannot provide freedom from want. Security must be based first of all upon a different kind of world. The nations must cooperate with each other so that economic benefits will be available to all and trade may flow freely. The standard of living must be increased, not only in one or two nations, but generally throughout the world. We must, through encouragement and stimulation of private initiative and worth-while public enterprises, see to it that people are fully employed in productive effort. If these two objectives are not accomplished, it is idle to talk about any considerable extension of social security as a permanent plan.

"Why is so little thought and planning given to these basic necessities and so much to the mere passing of laws which will extend compulsory insurance benefits? Are we not getting the cart before the horse?

"Social insurance cannot create wealth; it can only distribute it more equitably. Any politician can propose a plan for extending social security, but only a statesman can erect it upon the base of full employment and international economic cooperation. We should increase our social security benefits and extend them as rapidly as we can, but there is danger that if we get this intricate machine speeding too rapidly and have not sufficient oil, we may burn out the bearings."

It is well that so qualified and experienced a man as the former State Superintendent of Insurance, now president of the Associated Hospital Service, should emphasize these points. We hope he will continue to hammer them in, and we believe that every physician will lend a hand to assist him.

Commenting on his address, the *Westchester Medical Bulletin*² said editorially:

"He cautions those who would apply the British plan to the United States, to consider the existing differences in wage scales in the two coun-

tries; to remember 'the sincere attachment of our people to the preservation of reasonable political power and authority in the state and local communities'; and to make allowance for the desire of Americans to voluntarily provide for themselves and their families.....

"One cannot buy the experience of twenty years in two years; hence, Mr. Pink cautions us against listening to those who suggest that we can make up for lost time, skip over all the evolutionary steps, and improvise a mature and workable system of social insurance surpassing in excellence anything developed in Europe after decades of painstaking experiment.

"Even when Mr. Pink was our State Superintendent of Insurance, he was well known as a proponent of voluntary efforts in the field of social insurance.

"In our opinion, it is foolhardy for one to oppose the trend toward social security just as it is foolhardy, if not indeed suicidal, to oppose the principle of collective security among nations. But, as Mr. Pink so admirably states, 'social insurance cannot create wealth; it can only distribute it more equitably,' and we would do well to put first things first, by first making secure the social and economic bases for the untrammelled creation of wealth before devoting all our attention to the task of spreading it around."

Unless such common sense as that of Mr. Pink is heeded we are all likely to find ourselves in the situation of Mottoux, of whom Rabelais wrote: "He left a paper sealed up, wherein were found three clauses as his last will: 'I owe much; I have nothing; I leave the rest to the poor.'"

Editorial, *N. Y. St. J. M.*, April 15, 1943.

"There Are Such Things"

Aberdeen, Md., Jan. 19th, 1942.

Dr. X. Y. Blank,
Wilmington, Dela.

Dear Dr. Blank:

When I left Wilmington in 1915, I also left behind a bill that you had against me for attention to my wife in 1914. As I recall it was for \$50.

I have never been in a position until now when I could pay several of such debts, but now that I am, I want to settle them regardless of their age.

My reason for not sending you a check with this letter is because I do not have your street address, and I do not want the letter with check to go astray.

Will you please let me know, if this letter reaches you O. K., your street address, and whether or not my memory in this matter is correct.

Very truly,

A. B. C.

January 25, 1943.

Mr. A. B. C.,
Aberdeen, Maryland

Dear Mr. C.:

Thank you for your letter of January 19th. It is most gratifying nowadays to find people as honest as you. I shall greatly appreciate your remittance of \$50.

With kindest personal regards,

Yours very truly,

X. Y. Blank, M. D.

Street.

¹ February 16, 1943.

² March, 1943.

Editorial

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CAPITALISM DESIRABLE

Somehow we have little fear of communism taking hold in our country. No communistic form of government has ever been successful. When put to the test in Russia, it resulted in the control of the government by a few who held their power through a system of force and terrorism just as undesirable as the Czarist regime. The fine showing of Russian defense must be attributed to the love of the Russian for his homeland rather than to the type of government.

Neither is a purely socialistic form of government with the elimination of capitalism ever likely to meet the approval of American citizens. The socialistic party in Germany met the same fate as communism in Russia, with the usurpation of power by a few brigands led by a psychopath which promises to result in the destruction of the country as well as the rest of Europe.

The elimination of capitalism will never

meet with the approval of employer or labor unions. It is safe to say that as long as the majority of citizens in any country have private possessions to lose, there is no danger of revolution either violent or peaceful. Following 1929 the terms "capitalist" and "capitalism" were frequently referred to in a disparaging manner. Capitalism was blamed for the crash in 1929 and was considered by some a failure. Only shallow thinking fails to realize that any business enterprise requires savings or capital for its initiation. Anyone with a few hundred dollars saved is, strictly speaking, a capitalist. It takes savings and capital to make jobs and it is high time the opprobrium be removed from the word "capitalist." It is the capitalistic form of social order which has been the driving force that has made living in America better than in any other country.

The ambitious American who wants to accomplish things in a big way will want to continue our capitalistic form of society. Thinking leaders of unions know there would be no arguing with a socialistic government and, therefore, it is safe to assume that the majority of laboring men will never favor an entirely socialistic form of government.

Is there any reason to believe, if socialism in general will not be acceptable to the American citizen, that socialized American medicine will?

Socialized medicine abroad has been studied and most of the forms in use would not be acceptable to the American citizen. We are experiencing right now in this country a proof that the American citizen when he is able prefers to choose his own physician and hospital and pay for his service.

The all-inclusive British plan introduced in England by Sir William Beveridge will doubtless have its repercussions in this country. It is more than likely that a determined effort will be made to foist some such plan on our citizens on the grounds of war necessity.

Medical care in our country already has been socialized to a considerable extent. There are already as many hospital beds sup-

ported by government agencies as private. As a result of the war there is evidence of a tendency to increase rather than diminish the socialization of medicine. With the excuse of war emergency there is no telling what utopian plans may be suggested before the war is over. And after the war, what will be our economic status? It will require capital to provide new jobs for returning soldiers and high taxes will have to persist to pay interest on the already huge national debt. If the government is forced to supply the needed capital to furnish these new jobs, the transition from capitalism to socialism may be a simple matter. It will require a financial wizard in Washington to bridge the gap from war to peace economy.

For the medical profession to complacently sit back and oppose all change would be a mistake. To fail to resist complete socialization of medicine would be a betrayal of the American people. The profession should be and will be open minded in furthering plans proposed for the improvement of medical care at costs within reach of the public. The profession, as well as the public, are vitally interested in the preservation of capitalism, sometimes called the American way of life. Results of the recent elections indicate a reaction to the socialistic trends in our national government. A healthy state of affairs in the business world following the war will obviate any need for completely socializing medicine in America.

Editorial, *Min. Med.*, March, 1943.

OBITUARY

TALEASIN H. DAVIES, M. D.

Dr. T. H. Davies died at the Delaware Hospital on March 25, 1943, on his 67th birthday anniversary. His death followed several years of poor health, and he had been seriously ill in the hospital for three weeks.

Born in Chicago, Dr. Davies was a son of the late John R. Davies, the second son of Lord Wadley, of Wadley, Wales. Dr. Davies graduated in medicine at the University of the South, Sewanee, Tenn., in 1898.

He came to Delaware in 1903 to accept the post of assistant superintendent of Delaware State Hospital under the late Dr. William H. Haucker.

In 1916, Dr. Davies left to become superintendent of Ferris Industrial School, but resigned after about a year and a half to resume private practice.

He was plant physician of a war factory in Maryland during the time the United States participated in World War I.

During World War I, Dr. Davies also served on the advisory board of the draft, and he was appointed to the board in this same capacity, as neurological and psychiatric consultant to the Selective Service Administration here, in World War II.

From 1923, when he was appointed by Mayor George W. K. Forrest, Dr. Davies was president of the Board of Health until last year, except for a two-year interval, during the administration of Dr. W. H. Speer.

For many years he was also a member of the State Board of Medical Examiners, retiring from that post two years ago.

Dr. Davies was secretary and later president of the New Castle County Medical Society, and a member of the Medical Society of Delaware and American Medical Association. He was also a member of Delaware Commission for the Mentally Defective, and Davies Cottage at Stockley Colony is named for him.

Dr. Davies was appointed a professor of neurology at Temple University, Philadelphia, by the late Dr. Russell Conwell, but resigned from that position many years ago because of the stress of duties here. At the time of his death he was chief neurologist at the Delaware Hospital, and consulting neurologist at the Delaware State and the Wilmington General Hospitals. He was an Episcopalean and a member of St. Andrew's Church.

Dr. Davies is survived by his wife, Mrs. Elizabeth Tudor-Davis Davies; one son, Taleasin H. Davies, Jr., of Nashua, N.H.; a granddaughter, Marie Delphine du Pont Davies; and three sisters, Mrs. John Garrett, Mrs. Howard Knapp, and Miss Edith Gwendolyn Davies, all of Duquesne, Pa.

The funeral was held on March 29th, with the Rev. John Ellis Large, rector of St. Andrew's P. E. Church, officiating. Burial was at Lower Brandywine Cemetery.

BOOK REVIEWS

Neurosurgery and Thoracic Surgery: Military Surgical Manuals Volume VI. Prepared and Edited by the Subcommittee on Neurosurgery and Thoracic Surgery of the Committee on Surgery of the Division of Medical Sciences of the National Research Council. Pp. 310, with 103 illustrations. Cloth. Price \$2.50. Philadelphia: W. B. Saunders Company, 1943.

This is the last of the six war surgical manuals, officially prepared for the armed services and published by Saunders. The present volume adheres to the original plan—short and authoritative texts on treatment, with diagnosis reduced to the minimum. In the services the treatment outlined is to be followed, unless the surgeon can justify a change, which will probably be a very infrequent occurrence. As a matter of fact, the civilian surgeon would do well to follow the advice given in these six volumes, since they represent the composite opinion of many of the nation's leaders in their respective subjects. As up-to-the-minute epitomes this is an exceedingly valuable set of books. The price is \$20.00 the set—money well spent.

Manual of Industrial Hygiene. William M. Gafafur, D. Sc., Editor. Cloth. Pp. 508. Price \$3.00. Philadelphia: W. B. Saunders Company, 1943.

While the stress of this book is on wartime conditions, the subtitle—Medical Service in War Industries—is hardly necessary, since the volume is devoted to the *principles* of industrial hygiene and industry during wartime is still industry. Or is it?

The book is prepared by the Division of Industrial Hygiene of the National Institute of Health of the United States Public Health Service, and 15 of the 16 contributors are with the P. H. S. The oleaginous references, somewhat too frequent, to this service, are annoying. Dr. Carlson's lecture in New York City on the "Newer Knowledge of Nutrition" (cf. review below: *The March of Medicine*) should be required reading for all Federal personnel, from the President on down!

Despite these strictures, however, the book is a good one, adequately covering the gamut of industrial hygienic science, and in a comparatively small space. Overlapping is reduced to a minimum; the style, while not terse, is not verbose; ample references are

included, and two-thirds of these are to non-governmental publications; and finally, the index seems to be sufficient. Altogether, this is a book that can be recommended.

The March of Medicine. The New York Academy of Medicine Lectures to the Laity, 1942. Pp. 217, with 11 illustrations. Cloth. Price \$2.50. New York: Columbia University Press, 1943.

Anyone, physician or layman, who would enjoy hearing a top-ranking medical expert talk about some phase of his special field will appreciate these essays, in which six authorities discuss, in simple but scientific terms, the background and recent developments of some vital problems of body and mind. Thoughtful readers will discern a common underlying implication: as man is a social being, individual welfare depends upon social progress.

The lectures and their authors are: (1) Tuberculosis: the Known and the Unknown, by James Miller; (2) The Brain and the Mind, by Tracy J. Putnam; (3) The Freudian Epoch, by Alton A. Brill; (4) Genius, Giftedness, and Growth, by Arnold Gesell; (5) The History of the B-Vitamins, by Norman Jolliffe; (6) The Newer Knowledge of Nutrition, by Anton J. Carlson.

We wish all the voters in the country, including the Washington high hats, the brass hats, and the no hats, could read this great debunking lecture by Dr. Carlson. Of the seven excellent and timely "Marches" that have so far appeared, we like this one the best.

Essentials of Proctology. Harry E. Bacon, M.D., Professor of Proctology, Temple University. Pp. 361, with 168 illustrations. Cloth. Price \$3.50. Philadelphia: J. B. Lippincott Company, 1943.

This is the best small treatise on the subject of proctology that has come to our notice. It is very easily read and is exceptionally well illustrated, which enhances its value to the general practitioner and to the general surgeon. One does not have to thumb through long text to find the meat. As a good quick reference work the book can be heartily recommended.

Clinical Diagnosis by Laboratory Methods. By James C. Todd, M. D., late Professor of Clinical Pathology, University of Colorado, School of Medicine; and Arthur H. Sanford, M. D., Professor of Clinical Pathology, University of Minnesota (The Mayo Foundation) Head of the Division of Clinical Laboratories, Mayo Clinic. 10th edition. Pp. 911, with 380 illustrations. Cloth. Price \$6.00. Philadelphia: W. B. Saunders Company, 1943.

A new edition of "Todd and Sanford" is always welcome. To quote the junior author, "It is thirty-four years since the appearance of the first edition of this book. Since that time clinical pathology has undergone marvelous development" This 10th edition is visual tribute to the growth and recognition of clinical pathology as a specialty in medicine. As each year new methods are developed in the research laboratories, to be utilized in turn by clinical laboratories, the knowledge of a worker in this field must keep abreast of the newer procedures, while discarding the more obsolete ones.

There have been included in this edition, along with excellent illustrations, much new material. The determination of sulfonamides, the phosphatase method of King and Armstrong, a discussion of porphyrins in urine, and determinations of trypsin and amylase are among those included under clinical chemistry. The section on blood groups is excellent, and the importance and methods of testing for the Rh factor are considered. In the section on serology, techniques, as described by the originators of the methods, include those of Mazzine, Kline, Kahn, Huston, Eagle and Kolmer. The sections on hematology, urinalysis, gastric and duodenal contents, as always, are excellent. Especially important, in these days of global warfare, is the chapter on animal parasitology, with its bearing on tropical medicine. The section on microbiology, usually the weakest part of previous editions, is well revised, and includes some good photographs and illustrations of inclusion bodies, fluorescent staining of tubercle bacilli, diseases due to fungi, and the use of that important culture medium, Brewer's thioglycollate broth.

On the whole, this new edition will well

meet the needs of the teacher, student, medical technologist, and physician.

The Inner Ear, including Otoneurology, Otolaryngology, and Problems in Modern Warfare. By Joseph Fischer, M.D., formerly Senior Otolaryngologist, Polyclinic of Vienna; and Louis E. Wolfson, M.D., Instructor in Ear, Nose and Throat, Tufts Medical School. Pp. 421, with 79 illustrations. Cloth. Price \$5.75. New York: Grune & Stratton, Incorporated, 1943.

This book deals not only with the anatomy of the inner ear but also with its physiology, pathology, and neurology. It attempts to bridge the gap between the usual text books and the voluminous encyclopedias, and it does this very well indeed. The main attention is given to the labyrinth and its central pathways. Particular stress is placed on the pathologic anatomy of the various forms of labyrinthine disease. The book also lays stress on the fact that correct diagnosis and proper treatment depend on an exact knowledge of the pathologic basis. The last three chapters dealing with War Trauma, The Role of the Inner Ear in Aeronautics, and The Effects of Atmospheric Pressure Changes on the Ear are very interesting and of great importance to the physicians in the armed forces, especially those in the Air Corps. This book should be very helpful to post-graduate students of otolaryngology.

An Investigation of the Acuteness of Hearing of Children in the Delaware Public Schools by Means of the 4-A Audiometer (Phono-Audiometer). By Virginia S. Wallin, M. E., Psycho-Educational Examiner, Delaware Department of Public Instruction; and J. E. Wallace Wallin, Ph.D., Director of Special Education and Mental Hygiene, Delaware Department of Public Instruction and the Board of Public Education, Wilmington. Pp. 64. Paper. Price, 30 cents. Wilmington: Board of Education, 1942.

An elaborate statistical study, the gist of which is that the hard of hearing and the normal have the same basic intelligence, and that the former appear to rate lower mentally than they actually do. Partly a medical problem, the medical reports are too vague to have much value. The brochure will be of more interest to educators than to physicians.

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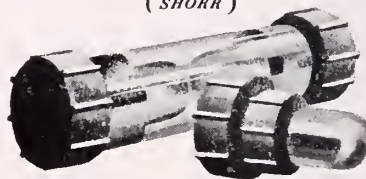
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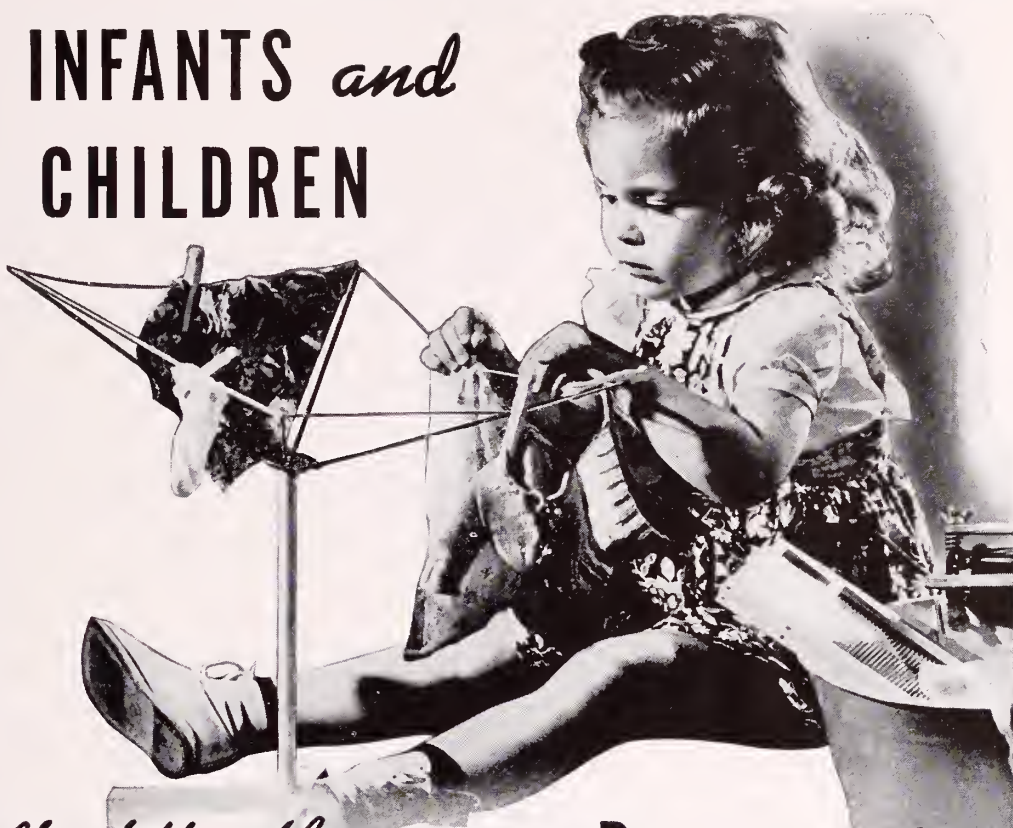
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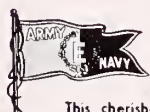
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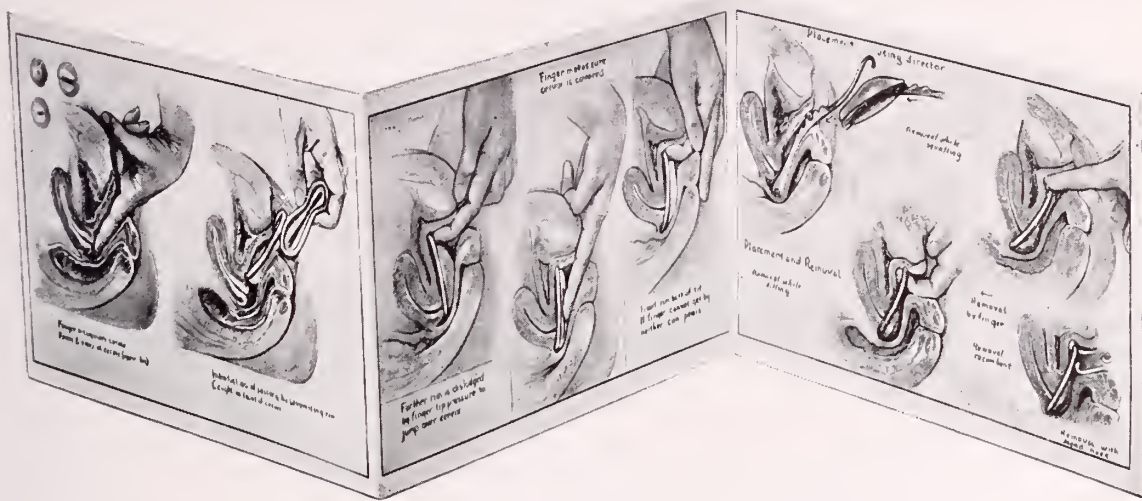
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HOW TO PRESERVE MENTAL HEALTH DURING DAYS OF UNUSUAL STRESS†

M. A. TARUMLIANZ, M. D.*

Farnhurst, Del.

It would seem that the danger of a break in the mental health of our people caused directly by actual warfare has been greatly exaggerated. From our past experience there is no reason why we should expect excessive increase in nervous breakdowns during this international conflict. From information we have at hand, people in Spain during the Civil War and in England during the present war, where hostilities were carried to the civilian population, there has been no increase in insanity, this in spite of the highly mechanized and greater scope of modern warfare. In the United States we are just beginning to receive meager statistics in regard to mental illness among the armed forces, while practically no accurate study has been made of civilian reaction as a whole. As is to be expected, in the beginning, the psychiatric casualties among the armed forces seem to be a little high; however, in studying some of these cases, who have come directly to our own institution, we find that many of the individuals have been either severely mal-adjusted, psychopathic, pre-psychotic or psychotic before they entered the Army, but were able to adjust in community life under normal conditions without anyone considering the patient as being more than a bit eccentric. The regulated life in the Army and the careful supervision has brought the psychoses to the attention of the authorities or has caused an accentuation of the symptoms. It would hardly seem fair to consider these cases as being caused by the war. Even after being discharged from the Army many are able to adjust in civilian life. Others, who have had their symptoms accentuated, would have be-

come psychiatric cases at some future date, the change in routine caused by Army life being merely the precipitating factor. It has also been true that a certain number of cases have been allowed to enter the armed forces who have previously been patients in a hospital for mental and nervous diseases. Dementia praecox has been the most frequent psychosis found. This is to be expected in considering the age group of the majority, which has, up to the present been inducted into the Army, since the onset of the overt psychotic symptoms of schizophrenia occurs, as a rule, between the ages of 18 and 30. Many of these cases would have been admitted to institutions within a year or two whether there had been a war or not.

We are not considering in this discussion cases of shell-shock occurring among men in combat duty, since I feel that the term "shell-shock" should apply only to such cases who have suffered from trauma due to concussion and who have been under prolonged physical strain without sufficient food or sleep. These cases should be considered as organic in nature and are often due to a slight cerebral concussion. True, there are definite personality changes which may continue throughout the lifetime of the individual, but the etiological factor is based on a definite physical trauma. Those cases in the last war who were diagnosed as shell-shock, but who really suffered from a hysterical reaction, should have been classified in a group of war neurosis, since their reaction was based on personality conflicts which were already present and merely precipitated by the war when an escape from reality was found to be necessary. This escape would have occurred, as we have tried to emphasize, under any severe environmental trauma, either domestic, economic, or war.

In considering the civilian population, we again have to turn to statistics from abroad. Here we find that cases of neuroses actually

† Read before the Medical Society of Delaware, Dover, October 13, 1942.

* Superintendent, Delaware State Hospital.

recovered with the onset of hostilities and that there was a marked decrease in the number of new cases admitted to the clinics for treatment. This, what seems to be a paradoxical reaction, was probably based on the fact that everyone developed a feeling of responsibility and had definite work to do which was of value to the group. People did not have time to brood over their individual mental conflicts and consequently did not develop the symptoms of a definite neuroses. Moreover, there was considerable ego satisfaction in the fact that the individual felt that he was useful to the safety of the nation and recognized as such. True, in this country we have not as yet, and we hope never, been subjected to actual fighting or air raids to a large scale. True, some of our possessions have been attacked, but with the exception of the Aleutian Islands, which to most people until the present time, was merely a name, this continent has been free from combat. However, with the enlargement of the Army and consequent decrease of manpower in the industrial fields necessary to keep the armed forces in action, there is a place for every individual to produce something of value for the welfare of the whole. This necessitates a direction of thoughts and emotions outward and is one of the best therapeutic measures which can be used in the treatment of the neurotic individual. It is true that there are a few cases of actual psychoses which may be caused by the war in a certain type of personality. However, these conditions are not common and are readily curable.

I will mention at this point just a few which might occur: individuals with a tendency toward manic depressive psychoses may develop a depressed attack when some member of the family is either injured, killed, or forced to enter the service. In times of actual combat there are cases of acute panic precipitated by fear, lack of sleep and prolonged stress combined with exhaustion. One can hardly consider these as mental casualties, as it has been found that they usually recover after two or three days in a hospital, where they can have sufficient rest, and they are usually able to return to their homes and carry on their duties in the same manner as before. A few overly-civilized people de-

velop a paranoid reaction. These individuals are of a type who are inclined to take their own position in life too seriously and who are depriving themselves of sufficient relaxation and entertainment. As they become somewhat exhausted, they are apt to first misinterpret the behavior of others and finally to become actually delusional but rarely hallucinated. They, as a rule show a certain amount of insight and usually make a satisfactory recovery. However, as long as they continue to neglect the ordinary rules of mental health, that is, sufficient sleep, adequate recreation and proper physical care, they are apt to have repeated attacks. The stimulus of the war has assumed an importance beyond that necessitated and they have used all of their energy in one direction, causing an imbalance in living habits.

It was to be expected that the greatest change would come after the war, for it has been found that people develop mental conditions not when the basic aspects of life are attacked, such as life itself, but when the more superficial aspects are in danger of being destroyed, such as economic security and social position. It would seem to me that there is less danger of a greater increase in mental casualties after this war than there was after the last, since there is being more stress placed on economic security for all and social equality, based not on birth, wealth or education, but on what the individual produces for the good of the community. For a time it appeared that our greatest difficulty would be one of adult maladjustment produced by boredom when it seemed more obvious that actual combat would not be carried on in this country. The behavior resulting in such a reaction would be in increased drinking, a lowering of sexual standards and a general indifference to the minor mores governing the community. However, with a controlling of spending and the psychological education which is being carried out through radio, magazines and newspapers, etc., there seems to be very little tendency toward this development at the present time. Adults, who lived through such a period during the last war, realize the danger which exists and most intelligent people are making a definite

effort to prevent such a situation from developing among the young people.

There has been a lowering of social standards and in all probabilities it will be necessary for the individual to deprive himself still further and learn to live with only the necessities of life. Also the civilian population will be subjected to fluctuations of emotions as they learn of defeat which will occur at times followed at others by victory. It is necessary that we realize that we are going to pass through a long period of emotional stress and that each individual should learn to control his emotional reactions, realizing that one of the greatest methods of stabilization is work, not for the individual but for the group as a whole. There will be some criticism but on the whole this criticism will be alleviated if the people are told the truth and made to realize the necessity of sacrifice which they must undergo. In considering the attitude of the people as a whole during this present conflict and the last, we find that twenty-five years ago the emotions aroused were more that of hatred while at the present we find that people are angry because of an interference with their freedom and way of living. It seems to me that the present manner in which people are accepting the change in their way of life speaks well for the mental health of the country as a whole.

Enemy propaganda has attempted to develop a "war of nerves" by broadcasting false rumors and reports. Fortunately their psychology, particularly in regard to this hemisphere, was at fault. There are two factors which make it improbable that this country will succumb to such a technique. The first one is that we are, relatively speaking, a young nation more mechanically than intellectually minded. We may be considered as adolescents in national development and are inclined to be skeptical unless actual proof is offered. The second reason is based on the fact that most of our people are of mixed blood and there is not one racial type with generations of prejudice. This mixture has a stabilizing effect on the country as a whole. This nation realized that it was in danger of being dominated by the forces of Nazism or Fascism, but, true to the spirit of democracy, it did not enter into active warfare until an-

other nation interfered with its activity. This country then engaged in a war which was the responsibility of every individual.

The average American is not interested in interfering with the affairs of others, but when given a job accepts it as a challenge. He looks forward to developing something new and if defeated, it arouses in him an effort to change his activities so that such a defeat will not occur again. In the older civilizations, however, defeat is a cause for depression rather than stimulation since there is a tendency to fix the blame and to worry as to why a plan has not worked out, with the result of a loss of energy which should be used in devising new and more workable techniques. Again, as in adolescent nations, war assumes more of the aspect of a game in which the combatant must take his part to the best of his ability. His emotions are involved in doing the job well and not in unnecessary hatreds and false pride.

Although there has been a marked increase in juvenile delinquency in England, we must again realize that the average child in that country has gone through considerably more stress than the child of this. We can expect a certain amount to develop because of broken home situations due to either the death of a father during combat or to his induction into the Army, or to both parents being away from the home working in defense industries, a situation which is becoming more common as the demand increases. As yet, the child has not been subjected to conditions where fear or panic would play an important role. As I have stated before, the average individual can meet a problem when unusual stress occurs, but is apt to break when the stress is relieved and he finds it necessary to return to a normal status of living. It seems to me that our chief problem lies in training the child, who will be the adult after this war is over, to live in such a manner and conduct the life of the nation in such a way that it will be impossible for a third calamity to occur.

Mistakes were made after the last war. We, as a country, on the whole, are ready to recognize this. The children of the men who fought in the last war are now forced to fight in another and much greater war. They are willing to forgive the mistakes that have been

made, but it is doubtful if democracy can survive if mistakes in world adjustment are again made after this war. We are fighting for certain principles which we believe are the rightful heritage of mankind. I cannot emphasize too much that only in the schools can we develop desirable principles of living if we are to allow civilization to progress. Every child has an opportunity to receive the highest education, but until recently, this education has consisted mostly in learning facts and has not fully taught the child how to live with his fellow man wherever he may be in this world. As is natural at the present time, there is considerable stress played in developing certain national ideals, but we must be careful that we do not indoctrinate the child so that he follows blindly wherever he is led. We should teach the child to use his intelligence freely, allow him to learn the importance of understanding the differences of individual mental processes and teach him racial and social tolerance and equality of all individuals in an economic and public social life.

We have made a mistake in considering higher education as something which all should be entitled to have whether they are intellectually or emotionally endowed for such or not. Again, until recently, a college education has been more or less a social necessity. I feel that the American people are now realizing that in the school system the child's abilities should be carefully studied and he should be encouraged to choose as his life work some trade or profession for which he is best endowed inherently. Only if we break down the social barriers which exist to a rather marked degree between the laborer and skilled mechanic and professional and business man can we succeed in having the child accept the training for which he is most apt. We must be careful at the present time that the child does not develop prejudices and false ideas regarding other peoples. Patriotism is not an inherent trait but acquired. Valuable as this trait is, the child must realize that in the entire scheme of things, all nations and all peoples deserve equal consideration and that only when one nation disregards the rights of another nation a war is justified.

You have asked me to discuss the subject of how to preserve mental health during days of unusual stress. I have digressed from this subject considerably since the problem in itself does not seem acute. Mental health is at its best during times of unusual stress, if this stress is based on the primitive aspects of life such as self-preservation and racial preservation. It is only necessary to follow the average rules of hygiene to keep the individual mentally healthy, that is, work which is of a productive nature and helps toward the welfare of the group, sufficient sleep and adequate recreation.

When we recognize fully the principles for which we are fighting individual deprivation will be considered as a sacrifice necessary for the future development of a true civilization which is based on principles we have accepted for many generations. Then we will work for a successful completion of our plans, not for the material gains which we might receive but for the ideals involved. Emotional, intellectual, and physical satisfaction will be obtained through normal outlets, without resorting to extravagant and artificial means of living and recreation. This will gradually and naturally lead to a better relationship between all people with a drawing away from selfish living and ideals. True, there will always be certain barriers in our social life based on individual differences, usually of an intellectual or emotional nature. We do not wish to interfere with individual social life but whenever possible equal standards should be strived for in public relationship.

The people of the United States expect from the government an adequately trained Army and Navy, who are well supplied with all the instruments of warfare. If this is true the man in the armed services may expect something from the civilian people. He is not only offering his services but his life and he hopes that those remaining at home will do more than carry on "business as usual." If a soldier is to be adequately equipped and to be well fed and clothed it will be necessary for the people at home to work more and produce more. There are two points which we must learn to accept. One is self sacrifice, since we must learn to deprive ourselves of the usual comforts and pleasures.

We must live with only the necessities of life and find substitutes for many of our pleasures. The second is discipline. We must restrain from a selfish drive and ego satisfaction and find a satisfaction in serving our country and humanity. Our soldiers must live lives of sacrifice. Why should the civilian accept the dangerous philosophy, "let us live the limit today, since tomorrow we may die."

In closing, I would like to say a few words about the importance of adequate recreation. England probably has given us the most important statistics in regard to how much effort an individual can use in his work. It has been found that the person who works more than ten hours a day for a long period of time produces less than the individual who has the necessary time for play. During an emergency, for a short period of time, a few weeks at the most, a person can work more than ten hours a day for seven days a week and keep up an average production, but after this period, there is found a definite lagging often combined with irritability, paranoid tendencies and inability to adjust in the group.

Summarizing, mental health is not something apart from all that constitutes the whole. The individual being a part of the nation must use his native endowments to attain normal physical, mental, emotional and social adjustment necessary for his inner requirements, and should learn through self discipline and self sacrifice how to maintain stability, in face of radical change of living habits. We should learn to help rather than condemn each other.

PSYCHONEUROTIC REACTIONS RESULTING FROM ORGANIC DISEASE

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The psychoneurotic is the most difficult patient with which every physician must contend. Many careful students of medicine maintain that a true psychoneurosis cannot occur without some underlying physical disability and that the psychoneurosis is only the patient's manner of reacting to the physical condition which is present. Bearing this in mind the practicing physician should not

make the diagnosis too readily, nor, if such a diagnosis is made should he fail to look for the physical factor which might be present and which must be cured before the patient obtains proper treatment. On the other hand many physical diseases may so closely simulate psychoneurosis that it is difficult for a differential diagnosis to be made without the most careful physical and laboratory examination. The case presented shows the problem which confronts the psychiatrist as well as the general practitioner when a patient comes to him complaining of vague physical symptoms, apathy and mild depression usually found in the psychoneurotic.

The patient M, a fifty-two-year-old white woman, came from a family which showed no evidence of nervous or mental disease. She was the oldest child in a family of two and the only daughter. Although born on a farm she was sent to High School and had considerable instruction in music. She was overly protected by her mother and considerably attached to her. Although her mother did all disagreeable tasks for her the patient did not seem to be spoiled but was always friendly and pleasant and readily took over responsibility when she was married. She showed a slight tendency to worry over trifles. She taught school and at the same time gave music lessons for three years before her marriage and was considered very capable in both. She was married at the age of twenty-three and was well until the birth of her only child about two years later. Since this time she was reported as being nervous, irritable, easily upset and even more inclined to worry excessively. She was anemic for some time after the birth of her child and her vague symptoms became worse until 1928 at which time she was subjected to crying spells and became weak and easily exhausted. She entered a general hospital and a pelvic operation and appendectomy were performed to correct a retro displaced uterus. Her recovery was gradual and her nervous condition seemed to improve with the enforced rest. However, in about a year's time again she began to complain of weakness and nervousness. These symptoms continued, and she again entered a general hospital in January, 1932, at which time she had a hysterectomy. Five months

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later she had a severe attack of influenza with a very high temperature and with kidney complications.

Early in 1933 she again went to a general hospital with the usual complaint of weakness, dizziness and some headache. Here a diagnosis of neurosthenia was made in spite of a red blood count of 3,950,000 and a haemoglobin of 62%. She left the hospital without benefiting from her stay there, took a short vacation in the mountains and returned home much improved and remained well during the summer, except for the fact that she suffered some from insomnia. Later all of her symptoms returned but in a more marked nature. She became very discouraged had violent crying spells, and, since the onset of her so-called nervous spells always followed some stress which she was unable to meet, she eventually entered the Observation Clinic in November, 1933, and remained there for two months. The diagnosis of psychoneurosis was made in spite of the following physical findings: basal metabolism rate was -15. The red blood count was within normal limits, there were definite areas of pigmentation; systolic blood pressure at rest was 110, and the heart sounds were weak. The thyroid lobes were palpable. She herself complained of a desire to yawn, insomnia extreme weakness. Although it was recognized that some physical abnormalities were present, the staff felt that the major factor in her illness was psychoneurotic in character. Under a regime of rest and hydrotherapy she left the hospital greatly improved. She was kept under observation for a year but the social worker reported that although the patient appeared greatly improved she gave the impression that she would readily have a return of symptoms at the slightest provocation. She re-entered the Observation Clinic willingly in October, 1942, complaining of weakness, listlessness, some depression and anxiety. At this time her husband stated that for the past several years she had suffered from periods of anemia during which times she would have a return of her nervous symptoms. She would improve with the use of iron injections and when her haemoglobin became normal she would recover completely. Since July her anemia showed no tendency to improve and

she became worried and readily gave in to her physical symptoms.

On initial examination the same symptoms were found as previously. She had an ashen pallor and her systolic blood pressure was 100, with heart sounds weak. She herself complained of severe weakness, pressure in the top of her head. Blood count was normal, but she had been on liver and iron therapy. She was not depressed on admission but looked extremely ill. Blood counts since 1937, while she was under the care of a physician at home, showed a red blood count which went as low as 2,600,000, and a haemoglobin of 66%. The color index was usually over one, but there were no abnormal cell types found. The basal metabolism in September, 1942, was plus 27, but it was felt that this reading was false since the blood cholesterol was elevated to 342 mg. per 100 c. c. of blood. In November she was seen by the consulting endocrinologist who placed her on $\frac{1}{4}$ grain thyroid, plus one grain of pituitary twice daily. She improved rapidly on this treatment and was able to return home in December with the request to come to the hospital monthly. Repeated basal metabolism tests showed a gradual decrease, the last one in March 1943 being -7. The cholesterol test was not repeated because of traveling difficulty. Until April the patient maintained good health. She was seen in March and appeared well. However, shortly after this she had a severe attack of influenza; the glandular therapy was stopped and she was given sulfathiazol because of continued elevation of temperature. She returned to the Clinic complaining of weakness, but with no other symptoms. The red blood count and haemoglobin at this time showed a tendency to be lower. Whether this was due to the fact that she discontinued the thyroid or to the influenza is rather difficult to tell. The final staff diagnosis, however, was recurrent anemia of hypothyroidism.

Here we have a case which presents a rather mixed picture. Recurrent spells of marked anemia showed the presence of some organic state. However, when her blood count was normal she still showed evidence of extreme weakness, yet laboratory tests showed that she was suffering from a low grade of hypothyroidism. Her mental reaction was out of

proportion to the physical findings, yet when the physical findings were brought to normal her mental symptoms disappeared. It is probable that this patient has rather strong psychoneurotic tendencies, but they were never evident when she was physically well.

There is always a precipitating factor present and this factor may be, and often is, organic in nature, while in other cases it is environmental. If the condition is precipitated by an organic disease no cure can be hoped for unless the patient's physical health is cared for. The cure in these cases may be almost dramatic in nature as compared to those in which the environment plays the important role. Too often the diagnosis of psychoneurosis is made and recovery is hampered because of improper attention to physiology. Cases in this group should not be allowed to become chronic invalids because of careless and improper study.

PSYCHASTHENIA IN A CHILD OF SEVEN YEARS

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The major psychoses of functional type are diseases of adult life and rarely occur before puberty. This childhood immunity does not include the minor psychoses or psychoneuroses. These mental conditions are common in children, the manifestations varying according to age. Very young infants may display simple disorders such as regurgitation, vomiting and disturbances of elimination without organic cause. In later childhood more elaborate symptoms are seen: night terrors, enuresis, unreasonable fears, anxiety manifestations, overactivity, and compulsive activities, including habit spasms or ties, masturbation and persistent mischievous behavior, lying, stealing, destructiveness and tantrums. Finally, well defined symptom complexes fitting the formally accepted definitions of the psychoneuroses may be observed in children of upper age groups or in younger children with high intelligence quotients, there being a certain relation between mental development and complexity of symptomatology. The

higher the intelligence, the more elaborate the psychoneurosis.

It is often said that a psychoneurosis can develop only if there is an inherited predisposition. It may safely be added that this predisposition is universal, varying in degree, and that given sufficiently bad environmental conditions practically any individual will develop psychoneurotic symptoms. In fact, when it is recalled that psychoneuroses have been experimentally induced in lower animals by subjecting them to repeated frustration, the relative importance of heredity appears less than is generally accepted. On the other hand, investigation reveals almost invariably that the psychoneurotic child has been exposed to psychically harmful environmental influences.

Children referred by social agencies include a strikingly high proportion exhibiting symptoms such as enuresis, tantrums, phobias, compulsive stealing, lying, etc. These children usually are from broken homes or have been subjected to parental neglect or abuse. Despite the best efforts of agencies, the psychoneurotic tendencies may be accentuated by the unavoidable necessity of changes in foster home placement, impressing the child with the insecurity of his position.

Children living at home with both parents under economic and social conditions generally considered excellent, may actually be subject to many influences calculated to create maladjustment and consequent psychoneurotic symptoms.

The following case is an example of a child whose situation would impress the casual observer as fairly good. Close study, however, revealed many factors to account for the psychoneurosis which is of a type extremely rare in the patient's age group.

K. H.: A white boy, aged seven years, was referred by the family physician because of "abnormal fears, compulsions, and poor social adjustment in school." The boy is an only child of parents in comfortable economic circumstances. The father lacks aggressiveness, suffers from severe feelings of inadequacy and has attained a moderate degree of business success as a result of encouragement and prodding on the part of his wife.

The mother is aggressive but tense and

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emotional. The parents disagree on methods of discipline and frequently quarrel violently in the boy's presence. Each parent blames the other for the child's mental state. The father ridicules the boy. The mother is over-protective and allows him to see her concern over his "nervousness."

Shortly after birth the patient developed projectile vomiting. Pyloric stenosis was diagnosed and arrangements were made for surgery. Before operation could be done, however, the stenosis was relieved. He suffered from eczema from age three months to age two years. He was kept in a play-pen long after he learned to walk because the mother feared he would hurt himself. He never slept in complete darkness. He "cuddled" a small blanket in bed and enjoyed the sensation of the fluff against his skin. He began to masturbate at the age of four and has not relinquished the habit. There were temper-tantrums from infancy to the age of five.

School adjustment was poor. The patient was terrorized by another boy in his class. He hesitated to enter into group play.

Upon arising in the morning he insisted on repeating this prayer: "Dear Lord, please do not let me have pains in school or have to go to the toilet. Please let it rain so I won't have to go out at recess and please don't let T--- fight me." Upon leaving home to go to school he had to stop at three definite places and call good-by. If the mother did not respond each time he would rush back to the house crying. He washed his hands dozens of times a day and went to ridiculous extremes to avoid touching objects and contaminating his hands. At bedtime he went through a regular ceremony, repeating "good-night, pleasant dreams," a certain number of times.

During interviews the boy was restless, excitable and distractible. He spoke of himself as "nervous" and objected that some of the psychological tests were "bad for my nerves." He was unable to explain his compulsive behavior, stating simply that he had to do those things. He washed his hands because they didn't feel clean even though he might have washed them a few minutes earlier. He attempted to manipulate test materials by

blowing parts into place or by pushing objects with his elbows.

Psychological tests showed the boy to be of very superior intelligence, with a Stanford-Binet quotient of 138 and vocabulary quotient of 147. Tests of manual performance type were done at the average level.

Repeated interviews have thus far resulted in little improvement. Efforts directed toward relieving the difficult home and school situations have not been too successful.

Summary: A boy of very superior intelligence, the only child of psychoneurotic parents, has shown evidences of neuropathic constitution since birth. At the age of seven years he displays well-developed symptoms typical of psychasthenia as seen in adults. The behavior pattern is firmly fixed and has not yielded to the psychotherapeutic approach. This resistiveness to treatment, of the adult type of obsessive psychoneurosis in children, has been noted by various authors.

THE THERAPEUTIC VALUE OF PNEUMO-ENCEPHALOGRAPHY IN POST-TRAUMATIC AND RELATED CONDITIONS

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The pneumo-encephalographic procedure is most valued as a diagnostic aid and consists of the partial or complete replacement of the cerebro-spinal fluid with air. This is usually achieved by way of lumbar puncture. It is not generally known that in certain instances this procedure has been attended by both subjective and objective improvement and the following two instances are recorded as examples of its therapeutic value.

Case 1: C. L., a white man 56 years of age, was admitted to the Delaware State Hospital on June 2, 1936. This patient's early development was normal except for the fact that he never attended school and did not even learn to write his own name. He had the usual childhood diseases. He suffered severe attacks of diphtheria, influenza and pneumonia. He had an arm fracture with satisfactory repair and an appendectomy. He had been a farmer most of his life. He objected to the use of alcohol on religious grounds. One day when he was about ten

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years old, he was chopping wood with his sister. When he leaned over too far, the sister accidentally struck him on the head with the axe. He was unconscious. The father stated that the brain could be seen pulsating through the wound. The father sewed up the wound with a needle and thread and bandaged it with a rag. Patient never had any medical attention. Ever since that time patient has suffered from headache, not severe enough to keep him from working but quite troublesome. Before admission to the hospital the headache had become more severe. The pain was localized over the left temporal region and was accompanied by sensations of flashing light and roaring in the ears, with extreme dizziness and attacks of nausea lasting for several minutes. At one time he became so dizzy that he fell to the ground, striking his head and remaining unconscious for hours. These attacks of dizziness have recurred at infrequent intervals. There was a gradual decrease in auditory acuity on the left side, and some decrease in vision in the left eye.

Upon admission patient revealed a marked loss of weight. Tonsils large, embedded and infected. Blood pressure was 130/90. Examination of the heart revealed nothing unusual. There was evidence of moderate peripheral arteriosclerosis. Chest was asymmetrical with depression of the lower portion due to an old injury to the ribs. There was an appendectomy scar. Otherwise abdominal examination was negative. The neurological status was as follows: There was sensitiveness of the peri-orbital and occipital nerve endings to pressure, decrease in the skin sensation in the left posterior and lateral areas of the neck. Tendon reflexes were generally active without any obvious difference in the sides. The pupils were slightly unequal, the right being a little larger than the left and reacting somewhat better to light. There was slight adiadokokinesis of the left fingers and a tendency to move the trunk forward in Romberg position. Urine analyses were negative except for a very slight trace of albumin on one occasion. The hemogram was normal. Blood sugar level normal. Slight increase in blood urea. Blood serology was negative and spinal fluid tests revealed no changes.

Patient seemed quite comfortable on admission. He was not concerned over his state but on questioning admitted that he had a severe and constant headache. There was some retardation in verbal response but no incoherence or irrelevancy. There was considerable emotional flattening. All mental reactions appeared sluggish but no sensory distortions or delusions could be ascertained. Patient had an encephalography on June 11, 1936. Two hundred cc of cerebro-spinal fluid were removed and 190 cc of air injected. The encephalographic findings consisted of poor ventricular air filling with most of the air found between the inner table of the skull and the brain in the upper frontal and parietal areas. The lateral ventricle showed evidence of pressure (from above) and appeared rather narrow in both lateral and frontal X-ray pictures.

Following this procedure the patient recovered very slowly and for a while continued to complain of dizziness and headache on attempts at sitting up. Twenty days after the air injection, patient was able to get up without great discomfort. He was practically relieved of his severe headache at the time of his parole on July 1, 1936. Following his parole he showed a satisfactory home adjustment with no recurrence of the annoying symptoms he had experienced up to the encephalographic procedure.

Case 2: J. S., 49-year-old white man, was admitted to the Delaware State Hospital on February 16, 1943. This patient had a normal early development. He had but a few years in school. He reads and writes a little. He has always been somewhat shy and backward. When about nine or ten years of age he went riding with some friends on a farm wagon. As they were crossing the railroad tracks, a train hit the wagon. Patient received a small cut on his head and a small injury to his leg; however, he was not unconscious and there were no immediate ill effects. Patient spent a year or more in France serving with the U. S. Army during the First World War. He said he had been shell-shocked and gassed, but no record has been available indicating that he has been hospitalized. When he first came home from the war, he was very excitable and fearful, awak-

ening in the night with "nervous spells." His people stated that he "trembled." Patient had several admissions to general hospitals between 1931 and 1936 for the treatment of carbon monoxide poisoning, hernia, compound fracture of the left lower leg and fragment (or exostosis) from old fracture union. At an examination by the military authorities in May, 1939, no psychosis or psychoneurosis was in evidence. Neurological tests revealed no positive findings.

Patient was seen by members of the Mental Hygiene Clinic on January 16, 1943, because of frequent spells occurring mainly at night. Patient was found to be sluggish during examination. He stared at the examiner and remained rigid and motionless as if trying to think. At the conclusion of the interview he suffered a convulsive seizure, perceptible tremors of the right hand and arm preceding the general convulsion. He was in semi-rigid position, all the extremities being partly fixed. There were clonic movements of the extremities and head. Whenever he was touched, he struck out blindly at the point of contact and tried to move away. When one hand was grasped, he struggled wildly and eventually broke away. The convulsive state persisted for at least twenty minutes without much diminution in activity. When finally grabbed by several men simultaneously, he quickly became exhausted in his struggles and quieted down. He did not regain consciousness for some time. The convulsive attacks were Jacksonian in nature. Apparently they have been growing more frequent and more severe during the period of time preceding admission.

On physical examination patient revealed a slight linear depression of the skull in the left lateral parietal region without local tenderness to pressure. There was a scar on the left forehead. He showed an old, healed compound fracture of the left lower leg with linear scar above the left inner malleolus. Blood pressure 120/80. The internal organs were found to be normal. The neurological examination revealed clouding of the left lens. The left eye ground could not be visualized, the right eye ground was normal. The pupils were somewhat eccentric, the left one irregular in outline and both reacting promptly to

light and convergence. Nystagmus was positive, mainly in the extreme right position of the eyeballs. The tongue deviated slightly to the right. Sensibility was normal for all qualities, and motor functions were regular. The upper tendon reflexes were moderately and equally active. Mayer negative on either side. Abdominal and cremasteric reflexes positive and equal. Patellar reflexes and Achillean reflexes moderately and equally active. No clonus. Plantar reflexes positive on either side, with extension of the reflex area. Oppenheim positive on the left side with plantar flexion of all toes, positive on the right side with moderate plantar flexion and slight spreading of the toes. Gordon positive on the left side with plantar flexion of all toes, negative on the right side. Squeezing of the left Achillean tendon (Schaefer's sign) was followed by plantar flexion of all toes but no such reaction was obtained on the right side. A spontaneous coarse trembling was observed on the right hand and fingers lasting a few minutes. Speech appeared to be normally articulated. To his knowledge patient has never been subject to spells of any sort in his childhood. He did not remember having had any before entering military service and participating in combat. At present he is aware of shaking all over when in one of these attacks. He was told that he had them especially at night when asleep, but he has no distinct personal remembrance of them except when they are occasionally preceded by a sensation of disagreeable smell (olfactory aura).

Patient had a pneumo-encephalography performed on February 4, 1943. Two hundred and twenty-five cc of spinal fluid were removed and two hundred ten cc of air injected. Ventricular filling was satisfactory and the ventricles were found to be somewhat larger than normal with a very slight asymmetry in size and position. There was no pineal shift. There was normal filling of the sub-arachnoid spaces throughout except for increased air density in the right parietal region indicating cortical atrophy, possibly traumatic in origin. Spinal fluid pressure was 27 but there were no abnormal findings in the spinal fluid otherwise. Patient has been free of any convulsive or epileptiform

manifestations since encephalography was performed, even though he has not received any anti-convulsive medication.

SUMMARY:

Two patients with the diagnosis of post-traumatic disorder are presented in whom pneumo-encephalography was followed by subsidence of annoying symptoms such as headaches, dizziness and convulsive seizures. This relation is brought out to demonstrate the value of the pneumo-encephalographic procedure as a therapeutic means in the treatment of various disturbances associated with traumatic cerebral involvement. It is of interest to note that in both instances the pressure and amount of cerebro-spinal fluid were distinctly increased.

MENTAL ILLNESS AND MILITARY SERVICE

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It is generally agreed that persons predisposed to abnormal mental reactions are unfit for military service. Various means are in use to sift potentially inadequate subjects which would become a liability to the armed forces. Dependence is placed to a large extent on the sincerity of the draftee in filling his various questionnaires and in giving information to those who are expected to pass judgment on his suitability for military service. It is felt that snapshot interviews and psychological tests cannot solve entirely the problem under discussion and that sound psychiatric experience and advice are prerequisites for adjusting a situation which has led, in many instances, to misunderstanding and resentment on the part of the relatives of those discharged from military duty owing to some mental ailment.

We have been interested in these cases because they seem to clarify the difficulties with which the examiners have to cope, and the shortcomings of defective "selection" methods.

The Delaware State Hospital has, since the introduction of military conscription, received a total of sixteen one-time members of the armed forces. The most typical (12) cases

are chosen to demonstrate to the interested practitioner the factors most often encountered in the defective recognition of mental imbalance as applied to the problem of military induction. These cases are arranged in five arbitrary groups with certain common determinants typical of each.

Among the selected material we encountered three patients who had been previously admitted to our hospital.

Case 1: R. B., 22 years of age, readmitted on April 11, 1942. Both parents were addicted to alcohol. The mother was of low intelligence and known to be promiscuous. Patient had cholera infantum at the age of two years with stuporous state. Enuresis existed until 11 years. He never progressed well in school, repeated the second grade four times. He was undisciplined and frequently played truant. His first admission took place on November 7, 1932, on court order because of alleged shooting of his father. General behavior varied considerably with frequent impulsive and violent episodes, tendency to conceal sharp objects and to threaten with vindictive acts, sulky states and inclination to minimize the seriousness of his outbursts. He was unreliable and invariably broke his promises. Following his last escape in August, 1939, he was kept on the parole list. When at large, he indulged in drinking and promiscuity. He was temporarily held in jail on charges proffered by his mother.

He managed to join the National Guard in November, 1940, and enlisted in the Army January 10, 1941. After going AWOL in October, 1941, he returned to camp voluntarily, was court-marshalled and sentenced but received pardon upon outbreak of the war. He was in frequent trouble with the military authorities for disciplinary failures and was placed under medical observation in December, 1941. He was discharged in March, 1942, and transferred to the Delaware State Hospital. Since his return he showed a defiant attitude, broke rules, had temper outbursts and actually set fire to his room. He committed suicide on January 13, 1943. Though this case was always quite problematic, it was generally agreed to be one of psychosis with psychopathic personality. Patient was a non-verbalist of dull-normal intelli-

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gence, according to his last psychometric test of May 18, 1942.

Case 2: E. P., 21 years of age, readmitted on August 28, 1941. Family antecedents non-contributory. Patient reached the 8th grade at the age of 16. He was inefficient in his work, lacked initiative, appeared lazy. He was laid off in November, 1937. Thereupon he joined the CCC Camp in 1938. He was under medical supervision with complaints of dizziness and shortness of breath for two months. He was possibly unconscious for five minutes following a car accident resulting in a laceration above the nose. A change of behavior was noticed afterward, with suspiciousness and ideas of reference. He refused to go back to work, became preoccupied, unresponsive and emotionally rigid. It was learned that he committed acts of perversion on a dog and cat. His first admission was on April 17, 1940. He appeared stuporous, episodically excited and noisy; occasionally untidy. He improved after a series of metrazol treatments. He was paroled on January 8, 1941. While home, he helped with the housework, but gradually became defiant and inactive; said he was Superman, controlled by supernatural powers. He joined up with the Marine Corps in June, 1941, forcing his parents' consent with threat of escape. Patient was referred to the Naval Hospital with complaints of dizziness, headache and nausea. He became increasingly withdrawn, suspicious and inactive. He was discharged and transferred to the Delaware State Hospital on August 28, 1941. As claimed he reported ill after two weeks of drilling on account of dizziness and returned to his unit for a short while before he was permanently hospitalized. Provisional diagnosis: Dementia praecox, catatonic type.

Case 3: S. R., 35 years of age, was readmitted on February 13, 1943. Familial antecedents and early development non-contributory. He had three years of High School. He worked as a bookbinder; was laid off in 1930. During the following period, he became sensitive to criticism for inability to find employment and means of self-support. He had short depressive episodes in 1933, recurring in 1936. On February 15, 1938, he lapsed into a state of deep depression when

refused a job which his brother got. He appeared dull, apathetic and inclined to blame his failure on others; considered suicide. His first admission was on April 2, 1938. Under observation patient was depressed, hallucinated in the auditory sphere, temporarily agitated, but coherent and relevant. Herniotomy was followed by an aggravation of the depressed state. He showed gradual improvement and was paroled August 26, 1938. Recurrence of depression, precipitated by unemployment, prompted his return to the hospital on April 25, 1939. He was paroled again on August 16, 1939. On February 18, 1940, patient was brought back to the hospital in a hypomanic state. He was mocking and resentful of pack treatments, became threatening and impulsive. After a series of metrazol treatments he was again paroled as recovered on June 15, 1940. He enlisted in March, 1941, serving with the Signal Corps. On a furlough in October, 1942, he appeared dissatisfied and reticent to his parents. In December, he was reported mentally ill to his father and discharged from military service. He continued depressed at home and was returned to this hospital by his father. At present he is receiving electro-shock treatments and is improving. Diagnosis: Manic-depressive psychosis.

The next group under discussion consists of cases with convulsive disorder:

Case 4: W. S., age 34 years, was committed to this hospital July 8, 1942. His father suffered with fainting spells. Epileptic seizures were said to have started at the age of six after being hit by a snowball. He had to repeat the third and fourth grades, reaching the 7th grade in school at the age of 16. He worked as a laborer. He was frequently moody on account of his spells. After three years' service with the National Guard, he received an honorable discharge on the grounds of epilepsy. He was classed 1B for bad teeth and inducted May 14, 1942. Patient claims he told the draft officials of his attacks. His seizures were soon observed and led to hospitalization on account of symptoms of confusion. At that time he was subject to auditory hallucinations, hearing the voice of his mother, etc. He was transferred from the camp hospital to this institution. He pre-

sented no evidence of psychosis here, but had several epileptic seizures. He was paroled on September 1, 1942.

Case 5: S. L. M., age 20 years, was committed to this hospital December 31, 1942. Birth was full term with forceps delivery. He was a "blue baby", requiring artificial respiration. There is a history of two accidents to his head. The first one occurred in October, 1931, at the age of 9 when he was knocked over by a stranger on the street; the second was due to a baseball hit with unconsciousness and hospital treatment for concussion in May, 1940. At the age of ten he suffered with brief attacks of petit-mal appearance, had frequent falls. He was at the Mayo Clinic in 1940, but treatment was not followed by any striking change. While living in Minneapolis in 1941, he joined the Marine Corps and was sent to the West Coast. He was discharged from service as physically unfit about two months following his induction on account of his seizures. On Christmas, 1941, his attacks recurred with greater frequency and severity and were marked by localized twitchings, peculiar noises, and absence of frothing or incontinence. Under observation he was irritable, sensitive and quarrelsome, but offered no definite psychotic symptoms. A pneumo-encephalogram revealed distinct abnormalities of the ventricular structure.

The third group consists of cases with familial incidence of mental disease, but no pre-induction psychosis.

Case 6: C. S., age 22 years, was committed November 12, 1941. His father has been a patient in this hospital since April, 1935, with a diagnosis of dementia praecox, paranoid type, associated with post-encephalitis. One paternal uncle was admitted with dementia praecox, paranoid type on Jan. 27, 1931, and discharged June 30, 1935.

Patient had difficulties in school adjustment due to speech defect and sensitiveness about his father's illness. He was shy, worrisome, easily upset over trifles, avoided contact with the opposite sex. At the age of 18 he graduated from High School. He was steadily employed as a laborer in a fibre mill. He was inducted Jan. 9, 1941. On May 26, 1941, he was taken ill and admitted to the

camp hospital with symptoms of silly, over-active, bizarre behavior, grimacing, and untidiness. He had to be treated for self-inflicted skin lesions. He was seclusive, careless in his habits, impulsive and destructive, untidy and disrobing. His speech was fragmentary and iterative. He received metrazol treatments, improved and was transferred to this hospital with a diagnosis of dementia praecox, hebephrenic type. While in this institution he was emotionally rigid and lacked insight into his previous therapeutic experiences. He adjusted fairly well and improved, obtaining parole in January, 1942.

Case 7: A. M., age 19 years, was committed to this hospital January 21, 1943. One brother was hospitalized twice with manic attacks in 1938 and 1940. Patient had three years of High School. After joining the National Guard for one year, he entered into army service. He was placed under psychiatric care at a station hospital for a depressive state and discharged on March 19, 1942. He could not adjust at home, was unable to hold a job and was once arrested for breaking and entering. Two weeks before admission he became excited, talkative, quarrelsome, had crying spells and developed into a frank manic phase. He improved with electro-shock treatment, however had a brief relapse. Diagnosis: manic-depressive psychosis.

The fourth group is characterized by mental difficulties developing prior to induction without known familial incidence of insanity.

Case 8: A. T., 24 years of age, was committed to this hospital October 19, 1942. Patient graduated with honors from High School at the age of seventeen. He went to Drexel College for a short period; also took a business course at Beacom's College. He was studious, serious in his thoughts and reserved. He was employed as bookkeeper and accountant but was discharged because of mental symptoms. He believed people were picking at him and tampered with his car, preventing him from being prompt, and were jealous of him. Following his induction on October 16, 1940, he remained in different camps for a few months before breaking down. Mental symptoms became evident first on March 31, 1942, with odd somatic complaints and hallucinations dealing with per-

verse sexual acts. Voices accused him of stealing and lying. In April, 1942, he revealed feelings of unreality, lack of concentration and fragmentary speech. He was, then, diagnosed dementia praecox, paranoid type. He went through several mental observation stations and was finally removed home by his sister. As she was soon enough aware of the fact that she could not cope with his problems efficiently, she brought him to this hospital for electro-shock treatments which unfortunately did not bring about any satisfactory response.

Case 9: H. G., age 31 years, was committed to this hospital January 5, 1943. There is no familial incidence of psychosis. Patient had an instrumental delivery, a slight delay in walking and talking and suffered with enuresis. Nail biting has been a constant habit with him. He was no problem in school until he reached the higher grades. Then he had to repeat two grades, and completed two and one-half years of High School at the age of 19 in 1930. He worked steadily in a grocery store. Previous to induction he worked as carpenter at an airport. He never formed any close friendships; was withdrawn, shy, quiet, and disinterested in social affairs. He had a fainting spell on Jan. 30, 1941. On November 24, 1942, he was inducted into army service. Within four days he was sent to the station hospital for psychiatric observation, and diagnosed dementia praecox, catatonic type. He was discharged into the custody of his father. While home, he appeared apathetic and depressed. His appetite and sleep started to fail. A day previous to admission he was found in the process of an incestuous act upon his sister. This precipitated his commitment. Under observation he was inhibited in his response, fearful and emotionally rigid. He showed a satisfactory remission under electro-shock therapy.

Case 10: J. S., 22 years of age, was committed to this hospital Sept., 1942. Patient is a twin. He was a school problem, very emotional, disrespectful, was brought to the attention of the Mental Hygiene Clinic in 1933. At that time he was believed to be mentally retarded, however, on recent tests he was found to be a non-verbalist of dull-normal intelligence. He reached the 8th

grade in school. He worked in shirt factories and a weaving mill. He was inducted into army service Jan. 28, 1942. Within a short time mental symptoms appeared. He believed people called him names, refused to eat, had to be tube-fed and rejected pay checks. He was discharged in May, 1942, and placed under his father's care. He remained depressed; was afraid to leave home because of people making fun of him. He started working but had to be discharged because of overactive behavior. He indulged in grandiose plans. Under clinical observation he was agitated, overproductive, irritable and accusatory. He improved under electro-shock treatment, is fairly well adjusted at present and enjoys short home paroles.

The fifth group is concerned with individuals combining features of familial and pre-induction incidence of insanity.

Case 11: T. O., 27 years of age, was committed to the hospital Dec. 2, 1941.

Mother and half-brother of patient committed suicide by gas. Two of patient's sisters were in ambulatory care of the Mental Hygiene Clinic. Both are of low intelligence.

Patient reached the fifth grade at age 14. His court record consists of various charges such as breaking and entering, trespassing, malicious mischief, mistreatment of his sister, and larceny. He is of dull-normal intelligence. After enrolling in a CCC Camp in October, 1934, he was discharged on account of desertion. Though unemployed for many years, he held a job in a leather factory previous to induction. He entered army service in October, 1941. He worried about his draft situation for several months and hoped he would not pass the physical examination. He cried frequently. His marital plans were counteracted by the dissent of his girl friend's mother. He grew more worrisome when passing the physical test. Upon arrival in camp he was placed under psychiatric observation, had auditory hallucinations of religious content. He attempted suicide three times. He became more self-centered and childish. His diagnosis, then, was dementia praecox, hebephrenic type. He was discharged on Nov. 15, 1941, and returned to his parents.

Under observation patient continued depressed, hallucinated, caused a self-injury to

his chin to punish himself, had feelings of guilt and religious delusions. He recovered within two months under conservative care. Diagnosis: manic-depressive psychosis, mixed type. He was paroled July 18, 1942.

Case 12: D. S., 23 years of age, was committed to this hospital May 12, 1942. There was constant parental discord apparently due to the mother's paranoid tendencies (jealousy, false accusations, etc.), leading to separation.

Patient is very intelligent, graduated from High School at the age of 19. He never had any close friendships; was always opinionated and stubborn, was described as disinterested in the opposite sex. He could not hold jobs for any length of time because he considered himself superior and tried to advise his employers. His call to the army upset him. He bought a car but was unable to finish his payments. He was inducted during the first part of 1941. He was under medical observation from December 18, 1941, until May 7, 1942, when he was turned over to his father's care. While home he appeared incoherent, talkative, paranoid and threatening.

Under clinical observation he appeared euphoric, talkative with fragmentation and disassociation of ideas, though in fairly good contact with the environment. He improved under electro-shock treatments and was paroled on Sept. 18, 1942. Diagnosis: dementia praecox, paranoid type. He is, at present, working in an aircraft plant.

SUMMARY

From these case histories, gathered over a long period of time, it seems to be appropriate to conclude that definite factors of psychobiographic importance were overlooked, or paid insufficient attention to, in the cited instances. The correct knowledge and evaluation of these factors would, in all probability, have resulted in the avoidance of trouble and hardship, in a better social and economical adjustment, and in a more satisfactory utilization of human life in the interest of the war effort.

In our minds the five groups we have arbitrarily differentiated demonstrate clearly the inherent weaknesses of the personalities bound to break down under the influence of the change in their life situation.

It seems to us that the tenets of preventive psychiatry could have been easily applied and observed. Instead, mentally ill and potentially ill have been exposed to unnecessary strain and experiences seemingly harmful to them. Of course, it is most likely that even without the mental stress imposed by the emergency situation such individuals have a fair chance to develop a psychosis due to peacetime competition and poor capacity for adjusting their life even to so-called normal conditions. This should be a consolation to all those who are inclined to find fault with existing systems of elimination procedures.

The practical result of our investigation is the emphasis on detailed study of those features of personality structure and development which are liable to be dissimulated by the draftee and to be inadequately explored by the examiner. It would be of infinite value to the examiner to gain access to such sources of information as school, court, employment and institutional records will provide, and which, as long as untapped, remain a worthless treasure. Neither should one forget the importance of the family physician whose knowledge of more intimate conditions can offer a helpful contribution to the tracing of obscure danger moments. It will be necessary to utilize methods which will bring out:

- (1) the hereditary taint and familial background,
- (2) the (pre-psychotic) personality characteristics,
- (3) previous abnormal mental tendencies and acute psychotic periods of selectees, and to foster the understanding of these factors by all those concerned with the correct placement of the future members of the armed forces.

ALCOHOL AND SUBDURAL HEMATOMA

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In presenting two cases which showed symptoms of brain damage as sequence to trauma after alcoholic indulgence it is clearly evident that careful consideration of the clinical symptoms as well as psychotic manifestations has to be made. Frequently the

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diagnosis of psychosis is made and the patient committed to an institution as they show restlessness, irritability and delirious symptoms due to brain damage. Some mild neurological manifestations may also be present as incomplete aphasia, cortical irritation, convulsions or hemiparesis. Oculomotor palsies are sometimes encountered, as well as homonymous hemianopia. Anyhow, the diversity of symptoms should also lead one to suspect subdural hematoma or subarachnoid hemorrhage if post-traumatic features and psychotic manifestations are combined. Quite often symptoms of brain concussion are encountered also. The laboratory reports, with the exception of the spinal fluid findings, might be insignificant. We know that in subdural hematoma we have sometimes only mild changes of the spinal fluid. It might be clear or it might show only a yellow tinting. On the other hand in subarachnoid damage we see a red-brown or yellow-orange colored fluid or a real bloody mixture. Therefore, it is comparatively easy, on account of the spinal fluid findings, to differentiate both conditions even if differentiation is sometimes unimportant from the mere clinical standpoint.

REPORT ON CASES:

Case 1: P. F. The family history in this case shows no nervous or mental diseases with the exception of patient's son who was committed to this hospital in 1942 and diagnosed psychoneurosis, reactive depression. He has three siblings who are all in good health. The personal history of patient is relatively unimportant. He was always an even tempered man and had a cheerful and sociable disposition. He had only few outside interests, usually stayed around the home. He had no injuries, operations or convulsions prior to his recent accident. He worked as a plumber and was considered a very steady and dependable worker. It was stated that patient drank at times quite excessively, going on a drinking spree on his weekend, consuming large amounts of whiskey. For long periods of time he stayed entirely sober.

Two weeks before his admission to this hospital he went on a drinking spree and it was known that he drank quite heavily at that time. He returned home on May 4th. He appeared very sick, refrained from going to

work and stayed around the house. He was unable to swallow and it was extremely difficult to get him to take any food except some liquids. It was hard to keep him in bed as he appeared very restless and confused. On May 7th he managed to get up and fell down the stairway. As he was badly cut up, he was taken to a hospital and treated in the emergency department for multiple lacerations of the face and nose as a result of the fall, ten sutures had to be placed. After his discharge from the hospital, he became more and more confused, seemed to be stuporous and could scarcely swallow anything at all. He was seen by two physicians and committed to the Delaware State Hospital. His commitment papers states "states he has a large farm in Dover. This is false. Muttering and disoriented as to time and place. Face and head lacerations from fall. No alcoholic breath. No alcohol for four days. Disorders of memory. Incoherent and delusional. Intemperate about once yearly for one week."

Patient was brought to the hospital in the late afternoon by police officers who said he had recently been on a prolonged alcoholic spree and seemed to be greatly confused at the present time. It was noted that his speech was thick, that he was unable to give any data and appeared very unkempt. He had a large dressing on his forehead and the bridge of his nose. Pulse was regular but of poor quality. Summarizing the observations, it was believed that patient still showed some symptoms of acute intoxication but that other physical factors may play an additional role in bringing about the present picture. When seen later on the ward, patient presented the picture of severe shock, apparently due to brain damage and was in a semi-stuporous condition. Careful examination revealed bruises all over his body and especially of both knees. He had a deep cut, about three inches long, over the middle of the forehead which did not give the appearance of a compression fracture. There was another cut on the bridge of the nose and the bone seemed broken. His mouth hygiene was considerably neglected, tongue dry and coated, skin clammy, temperature subfebrile. No odor of alcohol on his breath. Breathing extremely shallow and chest showed scarcely any expansion on ex-

piration. Heart within normal limits, action regular but sounds very faint and distant. Pulse was of extremely poor volume, not perceptible on the left arm, poorly perceptible on the right arm. Blood pressure on admission was, on the left 60/0; on the right 60/40. The same evening 65/0 on the left, and 65/40 on the right arm. The next day the blood pressure was 40/0 on both arms. Pupils were mildly dilated and reacted very sluggishly to light and accommodation. The motor functions were considerably slowed down. Upper tendon reflexes normal; knee reflexes abolished and there was a slight clonus of the left foot. He showed a slight tremor of the eyelids; speech thick and hardly understandable and he had lost control of his organic reflexes. When first seen he spoke a few incoherent words but could be barely understood; was fumbling around with his hands and appeared for a while quite restless. He received at once stimulants, saline and glucose intravenously and his condition improved slightly so that he was able to take small amounts of liquids. After several hours he showed again circulatory collapse and stimulants and infusions were given again. The next day his condition appeared extremely critical and he showed all the signs of acute circulatory failure. He responded very poorly to all therapeutic measures and under the signs of progressing collapse expired at 10 a. m.

The history on patient is extremely fragmentary and, though it is known he was intoxicated several days before his accident occurred, it is believed that at that time he suffered only the sequelae of his former alcoholic indulgence. It cannot be stated from the history that patient experienced a form of delirium tremens but rather had apparently an acute alcoholic hallucinosis. He was confused and physically disabled. He had suffered a cerebral accident from his fall and, though no symptoms were noted at first, he later showed all signs of circulatory collapse due to shock and brain damage. The laboratory findings were insignificant and spinal puncture was not done on account of patient's precarious condition. A tentative diagnosis was made of subdural hematoma which was later confirmed by an autopsy carried out by the coroner. It is evident that patient suf-

fered from a confused state due to organic brain damage (subdural hematoma with circulatory collapse).

Case 2: E. M. Family history is non-contributory with the exception that a cousin was a patient in the Delaware State Hospital in 1927 and was diagnosed as dementia praecox. Patient was born 51 years ago and was always known as a friendly and sociable person. Also he was somewhat withdrawn and never inclined to discuss personal affairs with any member of his family. He never had any ambition and showed no initiative and did not accomplish anything during his life in spite of a good mental endowment. He never has been in any serious difficulties with the law, although he has been arrested on several occasions for drunkenness and disorderly conduct but generally just detained in jail overnight and was let go after he had sobered up. Most of his money, which he earned by doing odd jobs, was spent on liquor and wine. He never had any serious illnesses in his life but several weeks before his admission, patient had two or three convulsions while he was on a severe alcoholic spree. It was acknowledged by himself that he had his first convulsion two years ago after he was severely intoxicated. His drinking habits started quite early and he is said to have drunk quite heavily for many years. He did not annoy his family when drinking and preferred to stay away from home until he sobered up. He even tried to keep his family from being aware of his drinking by hiding bottles around the house.

According to the information obtained, his present illness was the first time he was known to have had delirium tremens but during the convulsions, which occurred before, he was known to be hallucinated. He saw people, jumping around the house and was extremely frightened. The night prior to his admission to this hospital, patient tried to jump out of an upstairs window but his father managed to drag him back. He was talking in a confused fashion and suddenly grabbed his coat and shoes and ran out of the house carrying them. Later he was picked up by the police and consequently admitted to this hospital. Commitment papers stated "he was brought to the Wilmington Police Station this

A. M. with evidence of alcoholism. This man is perspiring freely and in a sick condition. Delusional, hallucinations of sight, inclined to be violent at times. Alcoholic. Duration of attack before admission—several days."

Physical examination on admission showed a middle-aged male who was completely dehydrated and emaciated. Skin of right leg markedly bruised and discolored and showed several eroded areas. There was a deep, about two-inch wide, laceration in occipital region of the head which had to be sutured. He showed numerous scratches on his hands. Heart was within normal limits; heart action regular; blood pressure 138/86; pupils moderate in size, react to light and accommodation; both discs were very difficult to outline and were somewhat blurred; gait imbalanced and staggering. Deep tendon reflexes were all normally active and no pathological reflexes were discovered. He had a coarse tremor of both hands and was disarticulate on test phrases. Laboratory reports showed normal findings with the exception of the spinal fluid which was bloody tinged and showed a slightly elevated colloidal gold curve. The spinal tap was repeated six weeks after admission and the spinal fluid was completely clear and colloidal gold curve flat.

Upon his arrival at the hospital he was extremely noisy, fidgety and nervous; dirty and unkempt in appearance, shaky and confused; disoriented for time and place, and unable to volunteer any information. After a while he quieted down but still remained very restless and agitated and voided several times involuntarily. After about four days he started to clear up, gradually became cooperative and quiet but remained for a long time somewhat gloomy and peculiar. On admission he was vividly hallucinated and delusional, seeing all kinds of animals and men in his room and was extremely fearful that somebody wanted to kill him. These delusions and hallucinations disappeared completely after he got over his psychotic episode and his organic damage.

In summarizing, it could be stated that patient had an acute alcoholic psychosis but that his symptoms were overshadowed by a subdural hematoma and brain concussion that he had suffered by falling on his head before

admission and sustaining a deep laceration on the back of his head.

SUMMARY:

Careful consideration and differentiation of subdural hematoma and alcoholic psychosis, delirium tremens or other psychotic manifestations in alcoholics is very important from an individual, social and economic standpoint. A careful psychiatric, as well as clinical examination, should enable us to demonstrate intellectual impairment in cases of subdural hematoma in spite of trivial neurological findings. It is, therefore, imperative to use all the possibilities of our diagnostic armamentarium to recognize cases of brain damage in patients with a history of alcoholism and many lives can thus be saved.

ON THE MANAGEMENT OF PSYCHOTIC DIABETICS

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The traditional therapeutic concept regarding diabetes mellitus is based upon the absolute control of hyperglycemia and glycosuria. This concept has been contradicted lately in view of new experimental and clinical experiences. Mosenthal, (1) in 1935, advocated a liberal interpretation of hyperglycemia in the treatment of diabetes mellitus since "hyperglycemia without glycosuria, according to available evidence, not only has no damaging effects on the heart or other tissues, but it is a necessary stimulus for the proper assimilation and oxidation of dextrose in many persons, both diabetic and nondiabetic." Edward Tolstoi (2) and his collaborators observed that their patients did physically very well on one daily dose of protamine zinc insulin in spite of hyperglycemia and glycosuria. Their studies on clinical and ambulatory patients showed that sufficient utilization of carbohydrates regardless of the excretion of sugar in the urine manifests the essential principle in the therapeutic management. "Glycosuria," says Tolstoi, "has been such a dominant component in the treatment of diabetes that the more important factor of utilization has been almost totally ignored." His therapeutic interest is shifted from the quantity of sugar excreted to the quantity of

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sugar metabolized. Tolstoi's patients, therefore, were kept on very liberal diets. He postulates as guiding principles in the treatment: (1) maintenance of weight; (2) absence of ketone bodies; (3) freedom from thirst, polyuria, hunger, weakness, pruritus, visual disturbances. Treatment consists of one daily dose of protamine zinc insulin. Elliott P. Joslin opposes this view with great emphasis. He believes that hyperglycemia is "fundamentally an abnormal state" which must be controlled by all means. Tolstoi could show, however, that his patients did physically as well, if not better, as those treated according to the orthodox method. Extensive metabolic studies did not reveal any harm derived from prolonged glycosuria.

A discussion of the physiological problems involved in the controversy between the orthodox and the new concept would be beyond the scope of this preliminary report of two cases treated by the new method. It may be merely pointed out that the whole problem involves the need of the cells of the diabetic organism for glycogen. The diabetic state has been called a paradoxical situation, in which the cells are in greatest need of glycogen while surrounded by a milieu tremendously rich in sugar, i. e. hyperglycemia. Minkowski was the first to suggest that hyperglycemia may not be a passive but rather an active mechanism, with the help of which the organism tries to compensate for the difficulty of glycogen formation. Staub, applying the "law of mass action" upon the equation glucose: glycogen means that the compensatory elevation of the blood-sugar level outside the cell accelerates the intracellular glycogen formation. Hyperglycemia, thus, becomes a self-regulating process, permitting the utilization of glucose in spite of the insulin deficit. It is therefore, evident that a rational therapy must be based upon the essential fact that the cells of the diabetic organism are in need of glycogen and that the greatest possible utilization of carbohydrates is to be accomplished. This is the case if the "carbohydrate-balance" (Brentano), i. e., the difference between the intake of carbohydrates and the excretion of sugar in the urine, is as great as possible. If an increasing amount of carbohydrates can be utilized in

the organism, glycosuria becomes a matter of secondary interest.

Tolstoi's patients enjoy a great deal of freedom since they have only one daily injection of protamine zinc insulin and live on quite liberal diets. The management of psychotic patients, suffering from diabetes, is often confronted with great difficulties since the patients do not cooperate for lack of insight into their condition. Any simplification of treatment procedures appears, therefore, most desirable and worth a trial. It was decided to select two cases and to put them on one daily dose of protamine zinc insulin, to give them a liberal diet and to observe them for the three criteria as postulated by Tolstoi. Both cases suffer from a chronic type of psychosis and are continuously confined to the ward. This has the advantage of having them under the closest possible supervision. Each patient was treated in this manner over a period of at least 14 months. The following report is preliminary since a number of laboratory studies, not included in the regular routine procedure of urine analyses and blood sugar determinations, could not be carried out on account of the acute shortage of available laboratory technicians. It is, nevertheless felt, that the data as reported are adequate in demonstrating the usefulness of the method under consideration.

Case 1: S. S., is a 65-year-old Jewish woman of Russian nativity who came to this hospital in 1929 suffering from a manic psychosis, chronic in its course. She is illiterate, of limited intelligence and has little insight into her situation. This patient is a very active type of person who works on the ward and becomes disturbed if not kept occupied. Constitutional characteristics are pyknic habitus, obesity, vascular hypertension, varicose veins and diabetes mellitus. Patient's history is entirely non-contributory. The diabetic condition was discovered upon routine urine examination on November 21, 1941, when the urinalysis revealed 5% sugar. Blood chemistry revealed the blood sugar level to be 345 mg per 100 cc. Patient offered no complaints and no clinical symptoms such as thirst, polyuria, weakness, pruritus, somnolence, dimness of vision, furunculosis, or neuritis were apparent. Her appetite was

marked and she became quite uncooperative when placed on a restricted diet. Sixty-five units of regular insulin were given in three doses preceding the regular meals. Patient's urine become free of sugar and her blood sugar gradually came down to 251 mg per 100 cc (11-25-41); 157 mg per 100 cc (12-9-41) and 142 mg per 100 cc (12-23-41). Patient's diet at this time was restricted to 1500 calories and she constantly demanded more food.

At this time the following question arose: should it be the main objective to treat this patient in the conservative fashion by preventing glycosuria and keeping her blood sugar level within normal limits or would it seem wiser to try her on the management as outlined by Tolstoi. It was decided to put her on one daily dose of protamine zinc insulin, to give her a more or less regular diet, and to keep her free from ketonuria and from clinical symptoms of diabetes. Whereas Tolstoi recommends his management in order to keep his patients from being singled out as a group apart from their fellow men by having their habits of living approximating the normal ones, the consideration in this case was to keep a fairly adjusted psychotic patient from becoming disturbed. The advantage of continuous supervision and laboratory facilities justified the trial. Patient became very pleased when the regular hospital diet was reinstituted. Her weight at this time was 212 pounds. She received a daily dose of 45 units of protamine zinc insulin, which was started on December 30, 1941. Blood sugar level at this time was 145 mg per 100 cc and the urine was found to be negative for sugar.

The next blood chemistry was taken on January 6, 1942, at which time the blood sugar level was found to be 111 mg per 100 cc and 85 mg per 100 cc on January 13, 1942. Several urinalyses taken at this time were negative for sugar, but numerous specimens were slightly or moderately positive, varying between 0.9 to 1.3%. A blood sugar analysis on February 10, 1942, revealed a blood sugar level of 104 mg per 100 cc. Patient began to gain weight (220 pounds on 3-1-42 and 225 pounds on 4-1-42). The highest blood sugar encountered during this period was 157 mg

per 100 cc (3-10-42). There was no ketonuria noticed at any time and patient was entirely free of clinical symptoms. In June, 1942, it was decided to put her back on a restricted diet to avoid further gain of weight. Patient at once became uncooperative and it was increasingly difficult to manage her. Being an overactive type of person, she needed a normal caloric diet and she instinctively fought for an adequate amount of food. By the end of August, 1942, she weighed only 197 pounds. Her blood sugar during this dietary restriction varied between 173 and 98 mg per 100 cc. Patient, however, became increasingly nervous, irritable and demanding, and she was put back on a regular hospital diet at the end of August. She immediately began to gain weight and had regained 18 pounds by the end of the first week of October. She received U-40 protamine zinc insulin at this time and glycosuria varied between 1 to 1.3%.

Blood sugar levels in October and November varied between 97 and 137 mg per 100 cc. Patient's weight on November 3, 1942, was 214 pounds. She appeared well adjusted and was content on a regular diet and one daily dose of U-40 protamine zinc insulin. Only on one occasion, namely on Christmas, did it become necessary to give patient additional doses of regular insulin. At this time it was discovered that her blood sugar level had gone up to 394 mg per 100 cc, with as much as 3.3 sugar in the urine December 29, 1942. Patient had stolen boxes of candies from other patients and had eaten as much as two pounds a day between December 26th and 29th. By January 1, 1943, patient was back on her regular daily dose of protamine zinc insulin and, on January 5, 1943, blood sugar was 123 mg per 100 cc. Patient's weight varied between 218 to 212 pounds during the months of December and January. The only hypoglycemic reaction during these 15 months of treatment occurred on March 26th, when patient was found to be restless, semi-stuporous, perspiring profusely and clammy. She responded promptly to routine procedures. This reaction was explained by the fact that she had a gastric upset with diarrhea and vomiting which had deprived her of the full utilization of two meals.

Comment—This patient has been entirely

free from ketonuria and from clinical symptoms of diabetes. She has been receiving a regular hospital diet which is rather rich in carbohydrates. Patient eats two or three potatoes with meat and vegetables for dinner, insists on eating three slices of white bread with each meal and eats puddings or sweet desserts approximately three or four times a week. It was not attempted to free patient from glycosuria in order to permit sufficient metabolism of carbohydrates. The fact that patient remained entirely free of clinical symptoms of diabetes, felt extremely well throughout these 15 months and had no colds or diseases of any kind, justifies the conclusion that this type of management proved superior to the conservative type of treatment which could not have established better clinical results and would have caused severe maladjustment in patient's behavior.

Case 2: The new 61-year-old patient, A. D., was admitted to this hospital in August, 1938. She is of Italian nativity, is illiterate and had become severely psychotic following the amputation of one leg due to gangrene caused by severe diabetes and arteriosclerosis. She lived in constant fear of losing the other leg, screamed and hollered continuously, cursed God and her family and continued to live in a constant state of agitation. This patient was particularly hard to manage since she would become extremely disturbed after every single hypodermic injection of regular insulin. She also developed the idea that she was to be starved to death when food outside of her restricted dietary regime had to be refused to her. She was paroled against the advice of the hospital in January, 1939, and was re-admitted in May, 1940. Blood sugar levels at this time were found to be 207 (6-6-40), 197 (6-13-40), 337 (6-20-40). Urinalysis revealed glycosuria varying between 0.83 to 2.5%. She was treated with varying amounts of regular insulin and with a restricted diet, according to conservative concept. Glycosuria became practically absent but blood sugar levels varied between 135 to 268 mg per 100 cc. Blood sugar levels at the end of 1941 varied between 180 and 234 mg per 100 c. Patient's constant agitation and non-cooperation seemed to justify a change in management.

In January, 1942, she was put on one daily dose of U-40 protamine zinc insulin and she was permitted to receive the regular hospital diet. Since this patient has been eating two to three pieces of white bread with each meal, two potatoes and vegetables with meat for dinner and desserts and puddings three or four times a week with her supper. About once a week she eats special Italian dishes such as spaghetti with meat balls, brought to her by visiting members of her family. Blood chemistry on January 13, 1942, revealed a blood sugar of 129 mg per 100 cc, of 115 (1-27-42), 126 (2-10-42), 157 (3-3-42), 99 (3-24-42), 98 (4-14-42). Urinalyses taken before breakfast were mostly negative for sugar, while positive when taken after meals. A pyodermic process involving one ear and the big toe healed rapidly during the first two months after the new management was instituted. The highest blood sugar revealed during the year of 1942 was 176 mg per 100 cc (7-28-42). The majority of blood sugar determinations revealed findings within normal limits. The last blood sugar, taken on March 30, 1943, was 102. Patient's weight could not be determined due to her crippled condition. There was no ketonuria noted at any time and patient seemed remarkably well physically.

Comment. Most interesting in this case appears to be the fact that patient practically ceased to have hyperglycemia since being put on a regular diet rich in carbohydrates. This seems to be in accord with the theory that hyperglycemia is a compensatory mechanism which becomes unnecessary provided sufficient metabolism of carbohydrates is permitted. No attention was paid to glycosuria after meals. There was practically no glycosuria in specimens taken before breakfast. Patient has not had any colds, infections or diseases of any kind throughout these 13 months. There has been no evidence of progressive arteriosclerosis and she has not shown any clinical symptoms of diabetes. Patient has never received any additional regular insulin and the daily dose of protamine zinc insulin has been decreased to 30 units. Multiple injections of insulin aimed at a normal blood sugar failed to produce a satisfactory clinical result, whereas a single dose of

protamine zinc insulin, with no attempt to abolish glycosuria, produced an excellent clinical state.

SUMMARY:

This is a preliminary report of the management of two psychotic diabetic patients in whose case glycosuria was disregarded for over one year. Both patients received regular diets, rich in carbohydrate content, with a single daily dose of protamine zinc insulin. They have been entirely free from ketonuria and clinical symptoms of diabetes and have been in excellent physical condition throughout this time. The advantage of this management for uncooperative psychotics suffering from diabetes has been demonstrated.

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THE PSYCHOLOGICAL EXAMINATION OF INFANTS

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David was picked out from a large group of one-year-old children at an orphanage to start life in a new home. His adoptive parents were intelligent, well-educated professional people with no children of their own. The choice was made on the basis of David's charming manner, his immediate response to people and a pleasant facial expression. No information was available concerning his parentage, but it was said that he was an illegitimate baby. The adoption was legalized without further investigation.

David's adaptation to the new home was more troublesome than had been anticipated. He screamed at night and displayed extreme fears of being punished. He was restless, discontented, and random in his interests. Speech appeared late. As he grew older he had much trouble in getting along with other children. He seemed to enjoy annoying others. His attention was rarely well controlled and consequently, learning ability was considerably reduced. Personal habits were acquired slowly and practiced undependably.

He would respond to encouragement for short periods. Despite the great patience and the complete understanding with which he was treated by his adoptive parents, David's problems increased as time passed. He is now nine years old. Only in the second grade at school, he is unable to follow the work of that level and, in addition, is a serious conduct problem. His school maladjustments led to the examination at the Mental Hygiene Clinic. His teacher states that David is unmanageable in the classroom. He disrupts the class routine, gives no heed to his lessons, learns very little without constant individual attention. He is aggressive toward other children, frequently striking them and calling them names.

He has no friends. Stealing money, bicycles and other articles seems to have become a set habit in spite of efforts on the part of his parents and teachers to cure him of this. He is untruthful and acquires antisocial attitudes more easily than he does constructive work habits. He was seen smoking. His reaction to praise and punishment is positive, but of short duration. He is extremely stubborn, tense, and impulsive.

David's adoptive parents are quite distressed about their inability to cope with his problems. The mother is prepared to admit defeat and shows it by becoming disinterested and by active rejection. The failure to give David the education she planned for him and to enjoy the fruits of her efforts in later years is as disappointing to her as is the inability to have a child of her own.

Yet most such adoption tragedies are avoidable at present. In our age blind adoptions are wasteful and unnecessary. Careful pre-adoption studies of the child's abilities, attitudes, habits and of his entire personality provide a more secure basis for normal relationships and for the just satisfaction to be derived by adoptive parents from their work and sacrifices than does the outmoded, impressionistic picking of a "cute" baby from an infant mart. David's genealogy was less well known than that of a dog or cat at a pet show.

The question arises as to how valid and reliable psychological examinations of infants are. When intelligence testing of school chil-

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dren became a common procedure some twenty-five years ago much was written about the reliability or unreliability of pre-school tests. Many writers have then questioned the very practicability of infant examinations. These doubts concerning the value of mental studies of very young humans still linger on, even though much research has been done since then. The extensive studies of infant growth by Gesell at Yale University and by Charlotte Buhler at Vienna have very considerably enriched our knowledge about the mental and physical development of babies. As more psychologists are trained for diagnostic and educational work with infants, test results are being accepted as invaluable aids in educational counseling, habit training, personality improvement, foster home placement and adoption procedures.

Infant tests have been expanded in the number of phases observed. The human samplings on which the original observations are made have been improved. Technical and statistical methods have been refined. The present status of infant tests is such as to inspire an optimistic view of their value. Gesell makes this point quite clear in the following quotation: "If prediction is the essence of science, mental growth has a better scientific status than many problems which seem more simple and more valid. Growth is lawful. The seasons in their sequence and in their consequence are so ordered that Thoreau boasted that he could tell the day of the month within two days by the flowers that grew. In spite of its bewildering complexity, the growth of the child mind also will be found to be within the realm of law."

The orderliness of mental growth is exemplified by the gradual progression of numerous phases of behavior. Vocalization, articulation, and the appearance of speech have their set age norms. Gross motor development occurs according to a definite plan. The finer manipulative abilities appear in distinctly scalable sequences. The same rule applies to social adjustments and personal adaptations.

If a tiny object is placed on the table in front of the child, it is usually disregarded if the baby is less than five months old. At five months the average child fixates the ob-

ject with some attentiveness. His eyes may return to it, when it is temporarily lost from visual regard. At six months the average child will show some form of locomotive tendency toward the object. At seven months he will make a definite attempt to pick it up, usually without success. One month later, manual coordinations have grown sufficiently to enable him to get hold of it with a raking movement of the whole hand. At nine months the object is secured with scissor-like movement between the thumb and finger with the hand usually resting on the table. A still higher form of manual grasp which appears at 11 months is the pincer-like movement of thumb and finger from above without hand support on the table. In a similar manner the miracle of growth unfolds before our eyes in whatever activities and situations we select for study and measurement.

Norms may be established with fair accuracy for average infants. The difficulties of interpretation of results are no more serious in the case of infants than they are in the case of school children or adults. In both cases the obtained IQ's may not be regarded as rigid, unalterable values reflecting the global intelligence of the individual. They have much broader significance. The forces and factors which influence the effectiveness of a child's adjustments are very many. Most of them lie beyond the scope of purely intellectual aptitudes. The physical, temperamental, emotional, educational and conative phases play an enormous part in determining the baby's I. Q. on any test. The relationship of one function to another provides invaluable clues to the study of infant personalities. Since each I. Q. is the result of non-intellectual as well as intellectual traits it is important to know that no single function reflects the growth of intelligence. Thus speech may appear late and sometimes very late in perfectly normal, often superior children. The mental normalcy of a child cannot be determined by the study of one behavior phase alone. However, the development of speech in relation to the development of gross bodily movements has important prognostic implications. The status of speech assumes significance only in the light of the growth of all other functions. The meaning of mathemati-

cal evaluations is never absolute. Their relativity and interdependence enables us to decide whether the absence of speech indicates general intellectual retardation, or a specific handicap, or a physical deficiency, or a temporary educational plateau. It also permits certain predictions at an early age concerning the future development of the language functions. It is possible to speculate on the basis of test results at the age of one year whether a normal child will have difficulties in learning to read and write when he enters school at the age of six. The aptitudes underlying normal language mastery are clearly retarded at the infantile level, even though the baby may be entirely normal in all other respects and his global I. Q. may be average.

The need for a large number of units of growth and for small units of duration at the infantile stage of the life cycle is imperative. Development immediately after birth is rapid. Small increments or decreases may result in large variations and fluctuations of I. Q.'s. To reduce the clinical and experimental error all babies brought to our Mental Hygiene Clinic are studied by means of at least three infant scales. The scales used are the Vineland Social Maturity Ratings, the Cattell Infant Scale, the Kuhlmann-Binet Tests, and the Gesell Developmental Schedules.

Below are samples of test results of four babies with descriptive reports of their behavior and personality as observed during the examination.

TEST	Baby 1	Baby 2	Baby 3	Baby 4
	Age:	Age: 1 yr.	Age:	Age:
	10 mos. I. Q.'s	4 mos. I. Q.'s	8 mos. I. Q.'s	1 year I. Q.'s
Vineland	49	82	105	122
Kuhlmann		81	104	118
Cattell	62		104	
Gesell	59	74		112

Baby 1: Barbara is retarded in neuromuscular development. She cannot support herself in a sitting position and is uncomfortable and unhappy when held upright. She indulges in a good deal of aimless activity and some simple purposeful behavior when lying down. Eye movements are inaccurately co-ordinated. She attends visually only to fairly large, bright objects and even these

distract her very briefly from her misery. She takes hold of objects as she moves her hands and arms. Manipulation lasts only a few seconds. Barbara does not distinguish between familiar and unfamiliar persons. In fact, she rarely responds to the presence of people. Her simple wants remain unexpressed. She is most retarded in vocal development. Her crying is stereotyped and undifferentiated. Other vocal activity is absent. In addition to general retardation Barbara presents several peculiarities which indicate that her tendency will be to regress as time goes on. She is now mentally deficient and, because of defective attentional control, very difficult to train. She is eligible for commitment to the Colony for the feeble-minded.

Baby 2: Amelia is restless and fretful. She does not seem to be interested in constructive play. She stares at objects placed in front of her. When they are handed to her, she accepts them passively and usually puts them in her mouth. She chews vigorously on anything she can get hold of. She is dissatisfied with whatever attention she gets from her mother. When on her mother's lap she wants to get down. When she is down she wants to be picked up again. If not immediately satisfied she cries and falls to the floor in a temper outburst. Her mother states that Amelia behaves similarly all day long. Mother is greatly relieved from the strain of attending to her, when the baby is put to sleep at night.

Amelia's mental development is below average. Her motor functions are potentially the highest, though she is awkward because of a severe condition of rickets. She jabbars a great deal in her own jargon and is quick to imitate inarticulate sounds occurring in her immediate environment. She can say two words with some vestigial understanding of their meaning. Her adaptive behavior is the least well developed. The range of her mental activities is limited. She is unable to repeat simple acts. Her spontaneous play is restricted to carrying objects about the room and chewing wood. This baby is of low dull normal intelligence. Due to restlessness and lack of steady attention she functions in most instances at a level somewhat below her capacity. Speech is likely to appear early and increased language activity will serve as

a compensation for reduced motor effectiveness. The physical diagnosis was rachitic convulsions. Lack of adequate training and physical neglect are due to mother's blindness and emotional instability.

Baby 3: James is a lively baby. He anticipates some sort of meaningful activity at all times and plays with the table edge when nothing else is available. He is alert to events in the room and to articles within his reach. His manual grasp is direct and rather skillful for his age. Play is varied. He is in good control of each new situation and takes full advantage of opportunities for new impressions and experiences.

Motor development is normal for his age. He sits well and is beginning to stand with support. His natural curiosity finds support in aggressive action and excellent eye-hand coordination. Articulation is strikingly rare during the actual interview, but is reported to be in keeping with age norms. James prefers the left hand for grasping and the finer manipulations. His habit training is normal. He is of average intelligence and should develop in accordance with his capacity level in most functions. However, speech may be somewhat late in appearing and slow in developing.

Baby 4: Bill is an alert and responsive baby. He notices the various articles on the desk and immediately expresses willingness to play with them. He reaches out for them persistently and, if they cannot be reached, indicates by voice and pantomime that he wants them. He studies everything intently, but does not retain it for long. His curiosity is intense, though not profound. Gross motor activity is preferred to skilled manipulations. This preference may be a temporary one, as Bill is beginning to walk and thus to widen his experiences with the more distant environment. He is quick, almost impulsive, in his desire to learn. Comprehension is overspontaneous. This may interfere with the development of habits of voluntary attention and exertion in overcoming normal obstacles and in meeting ordinary challenges. He is dependent on others in critical situations. Bills' native endowment is definitely above average. Social attitudes are matter-of-fact and constructive.

Psychometric re-examinations of babies reveal no greater variability and change in mental ratings than do test results at higher age levels. Of course, the constancy of mental quotients is a specious claim. Intelligence as native capacity may be relatively constant, even though test quotients are not. However, there is law and order in all psychological changes. Longitudinal shifts in I. Q.'s may be predicted from intra-test variations and quotient patternings of any thorough cross-sectional study. The majority of test patterns are fairly consistent and uniform in their numerical distributions. There are, however, disparate behavior constellations with ascending or descending trends. The rate of rise and ebb may vary according to the circumstances of the individual case.

When tests of attention and speech development are compared, predictions concerning the rate and nature of future changes in I. Q.'s are often possible. When attention is good and speech poor, the trend of quotient changes is usually upward at the pre-school level, downward between the ages of 6 and 16, and upward again after 16, until 25. When speech mastery is normal, but attention poor, the trend is usually downward all along the age line. The earlier in life attention difficulties appear the more certain and the steeper the decline. In severe cases the decrease in mental efficiency may extend over all functions. Similar comparisons between all test functions furnish additional criteria for estimating the prognostic outlook. No single test rating has absolute diagnostic significance. It acquires full meaning only in relation to other findings. High ratings on tests are not necessarily favorable signs of personality integrations. General failure to adjust may be forecast with good accuracy from high achievement in certain domains, whenever this achievement occurs at the expense of other important domains. Verbal tests are no more valid in the determination of intelligence than are tests of motor, social, and adaptive development. The intrinsic multi-valence of test scores renders interpretations exceedingly difficult. Identical mathematical terms may have different psychological meanings depending on the patterns in which they are found. On occasions, remark-

able statistical constancy is produced by the intra-individual clash of powerful but equal forces pushing in opposite directions. Significant I. Q. changes may occur at all levels of intelligence. A baby who tests average at the age of one, may rate superior two years later. Such large changes are usually predictable.

The practical value of the statistical findings and of their descriptive complement becomes apparent when specific advice is given about the child's training problems. The social agency, through its home visitor, and the parents and foster parents are enabled to influence the direction and nature of the child's growth by resort to scientific data which is interpreted in a common-sense manner.

Prospective adoptive parents are informed as accurately and objectively as possible, before adoptions become final, about the risks and training problems which they face. Unwholesome emotional attachments between foster parents and adoption candidates may be counteracted by pointing out the apparent deleterious effects on the child. The strict supervision and control of social attitudes toward children with late speech developments are of utmost importance. Avoidance of unnecessary punishment and psychological trauma in cases of tardy speech may actually hasten the appearance of speech and thus prevent a long series of untold social maladjustments in children with otherwise normal personalities. Infant counselling is one of the youngest and most promising psychological disciplines. The practical results of sound educational therapy at this stage are most gratifying, as the subjects are flexible, pliable, and suggestible.

DELAWARE ACADEMY OF MEDICINE

Preventive medicine was stressed by a panel of 10 Wilmington physicians at the first of a series of open forum meetings for the public held on May 19th by the Delaware Academy of Medicine. The interest was so great that it is hoped to hold a similar forum meeting soon. Dr. Joseph M. Messick presided over the panel.

Dr. G. H. Gehrmann, who opened the discussion, pointed out that the need for preventive medicine is greater than ever before,

because so many physicians are now serving with the armed forces. He pointed out that it was the duty of the "home front soldiers" to learn and observe the rules which will keep them well. He pointed out that great strides had been made in preventive medicine, citing the curb of bubonic plague, smallpox, yellow fever and typhoid.

Special preventive medicine concerned with diseases of children was discussed by Dr. C. E. Wagner. Questions were asked concerning diphtheria immunization, the giving of serums to prevent whooping cough, and preventive measures which help cut down such communicable diseases.

At the meeting one of the doctors pointed out that an American flier who crashed following the bombing of Tokyo had to have an injured leg amputated because he had lost his packet of sulfanilimide tablets. The miracles achieved by the sulfa drugs was another topic discussed by the panel. The doctors warned the layman to beware of this powerful and dangerous drug unless it is advised by a physician and administered under his supervision.

Other doctors in the panel were Drs. Lewis B. Flinn, Frederick A. Hemsath, E. Harvey Lenderman, Lawrence J. Jones, Edgar R. Miller, John H. Foulger, B. B. G. Blackstone and Frank Konzelman.

Cancer and vaccines were the other two general topics discussed. The audience bombarded the panel with questions that ranged in one 20-minute period from trichinosis through the common cold, influenza, bubonic plague, and infantile paralysis.

Because of the excellent reception given the first forum, it is fairly certain another one will be held soon. The public was urged to send in written questions, addressed to the Academy of Medicine.

On May 21st, Dr. Jacob A. Bargen, of the Mayo Clinic, Rochester, Associate Professor of Medicine, University of Minnesota, Graduate School of Medicine, addressed the Academy on "The Varieties of Ulcerative Colitis; Their Relation to the Current War, and Their Management." This excellent address was especially well received.

Editorial



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SELECTIVE SERVICE

The local boards of Selective Service, as well as the Induction Boards, are confronted with a very serious problem, more so now than a year ago, first, because we have more data from combat and non-combat service; secondly, because we are conscripting the boys between 18 and 19 years of age. According to recent information about 27 men out of every 1000 enter hospitals because of mental illness. From 15% to 20% of all casualties being returned to the United States are neuro-psychiatric in nature. It is entirely within the Selective Service mechanism to

lower the above figures as much as humanly possible. The Selective Service System, as well as some of the state medical authorities in connection with some of the national social agencies, are working on a new approach which will eliminate from induction many young men who are fairly well adjusted in civilian life and are unquestionably useful citizens but who have definite personality defects in a form of maladjustment, neuroses, psycho-neuroses, mild psychopathic tendencies and other pre-psychotic conditions which are bound to become active under the stress of armed service.

We congratulate those men and women who have considered this social psychiatric approach. We have offered the services of the Mental Hygiene Society as well as the Mental Hygiene Clinics to the National Selective Service System and to the Delaware State Council of Defense.

If approved, we propose to establish a committee of qualified volunteer workers, who will gather all the necessary information from schools, agencies, courts, hospitals, etc. and whenever an individual has a history of a personality defect of some form, this individual will be studied carefully by competent specialists, and the report will be transmitted to the Local Draft Boards. Such a procedure will be carried on under strict confidence, thus protecting the future of the draftee. We are of the opinion that such a procedure will save many young men from undergoing an active psychotic experience, even if we forget the unnecessary expenditures of man power and funds.

THE SOCIAL NEEDS OF THE PRE-ADOLESCENT AND ADOLESCENT GIRL

CATHERINE T. GIBBLETT,*

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Many young girls, as well as young boys, are studied by the Mental Hygiene Clinic in Delaware. Among the girls there are the wholesome young adolescents who have been referred by schools and agencies for educational and vocational guidance. There also is the large group of delinquent and pre-delinquent girls who are referred by the courts, the probation officers, the schools, and agencies. These girls are studied carefully by the psychiatrist, the psychologist and the social worker. That which characterizes their life situation to a most marked degree is their lack of stimulating interests outside of their newly developed fascination for boy friends. They read popular fiction about love and they prefer shows which portray love making. These recreations necessarily add to their ideation about their own love affairs and desire for romance.

For many years it has been recognized that modern civilization brings about postponement of marriage beyond the age when young people physically are prepared for homemaking. For this reason sublimation of the sex urge, with its many secondary manifestations, is essential to a wholesome development of the adolescent. Society falls short in not supplying many fascinating interests for this age group. Frequently the pre-delinquent and delinquent girls come from dilapidated, drab homes where there is both physical and emotional deprivation. The homes for the most part are crowded and poorly furnished. Their lack of cleanliness is often deplorable. Frequently the girl from the underprivileged home has, at the age when she normally becomes attracted to boys, feelings of discontent concerning her home life. If she had a marked interest or hobby before she completed her development the chances are she would go through the adolescent period with fewer strong attachments and with less risk of becoming sexually delinquent. This illustrates the real value of interests as substitutes for thoughts about the affections of men.

It is not unusual for the girl who lacks opportunities to develop worthwhile interests also to be deprived of affection from her family. Her home life may be characterized by friction, bickering and profanity. If the girl finds her first emotional security in a man's making love to her—this occurring at the age when her sex urges are developing—it will then be most difficult for her to acquire an interest or hobby which will be equally satisfying emotionally. If she has a strong, all-consuming interest before she has the emotional experience that comes with love-making she will be less easily approached and taken advantage of by the man who is using her for a diversion or a pastime.

A case which illustrates the point presented is that of a young girl who because of her erudities is not permitted to attend the U. S. O. parties and entertainments but who meets the military men on the beach and allows them privileges. She is from a motherless home, the parents' separation having followed the father's excessive drinking. Another instance is the young girl who maintains to the probation officer that her "soldier boy friend" is sincere when he tells her she is sweet and that she has made his life worthwhile. This girl has never had an opportunity to meet boys on a companionship level. She is unable to talk to men about current affairs or follow their hobbies and intellectual interests. Unfortunately, her first several experiences with men, after she developed physically and after she became interested in the opposite sex, were in situations in which she had intimate relations. She knows of no other way to be interesting to a man. Still another young girl, who is from one of the crudest homes that the social worker has visited, has become a ward of the Juvenile Court because of her sexual delinquency. This girl was held at the Detention Home for a week. She was fascinated with the life there, while she was kept wholesomely occupied, and that about which she exclaimed most was, as she stated, "I bathed every day in a bathtub."

Every community should have club rooms for its young people from underprivileged homes. Such a place should supply opportunities for formations of challenging inter-

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costs. Interests are not necessarily expensive. One girl who comes to the clinic has a scrapbook of horses. This grew out of her having lived, as a child, near stables where beautiful horses were kept. She has extended her clippings to pictures of famous horses. Another young person says that she has always "loved" cartoons. During the present war she has saved cartoons and put them in a scrapbook. They are so well selected that they represent a history of the war. She gets much recognition from her associates when she shows her "collection." Watch the facial expression of young persons who are succeeding in a vigorous game of ping-pong and see the effect on the players' personalities.

These delinquent and pre-delinquent girls usually have not experienced success in school, as early in their school life they developed feelings of inferiority and inadequacy as a result of their appearance and inability to converse and compete in class discussions. The school failures have not resulted, except in occasional instances, from lack of mental ability but have been brought about by deprived environmental conditions. Furthermore, many of these girls have language and reading disabilities which have been factors in their lack of school success.

The club should supply opportunities for the girl to know how to be more attractive in appearance. With inexpensive means she could be shown colors and lines which are attractive and suitable to her. She could be taught the simple principles of personal cleanliness. The class could be labeled by some name which would appeal to the young girl as "Class in Charm." Every community has among its residents persons who have had unusual experiences or backgrounds and would be able to take the responsibility of certain subjects in the classes. For instance, one young matron recently spoke with pride about having had lessons in walking. This person could talk enthusiastically about graceful postures in sitting, walking, and dancing.

At all times a club for girls should have a person who could act as counselor to the members. Often in a game the young adolescent girl, due to home patterns of conduct and to her immaturity, is quick to become angry and quick to quarrel. If at such mo-

ments someone could talk over the problem with her and help her to adjust to the difficult situation she would have a maturing which would enable her to understand the rights of others, her own need to sacrifice, and the value of self control. Out of these contacts in counselling would develop the revealing of the girl's personality and emotional problems at times when she most needs guidance.

Classes in conversation might well be a part of the program for the underprivileged girl. If she could express herself well and talk interestingly and also could make the best of her own appearance she would be invited to attend activities rather than to have to resort to spending an evening in an isolated spot where the entertainment consists of love-making and intimacies.

One of the greatest opportunities that such a club could offer the girl would be the meeting of boys and men on a companionship level. Wholesome games, dancing and singing would satisfy the desire the girl has to be with those of the opposite sex. In such social activities she would develop a sublimation of her sex urges and at the same time have the enjoyment of both boy and girl friendships.

These five points—the development of a hobby, the becoming more attractive in appearance, receiving counselling in her problems, being able to talk with ease and appropriateness, and experiencing wholesome companionship with boys and men—all these opportunities would bring about a social and emotional growth in a young girl that would not only make her happier and better adjusted during her adolescent age but also a maturing which would extend into her later school, work, and home situations.

25TH ANNIVERSARY

On May 2, 1943, Dr. M. A. Tarumianz celebrated the twenty-fifth anniversary of his connection with the Delaware State Hospital. On May 2, 1918, he was appointed Assistant Physician, later becoming Assistant Superintendent, in which capacity he served until 1925, when he was appointed Medical Director. In 1926 he became Superintendent of the Hospital, and in 1929 Director of the Mental Hygiene Clinic and State Psychiatrist and Criminologist.

5,981 DOCTORS ADDED IN 1942

There were 5,981 additions to the medical profession of the United States in 1942 according to the forty-first annual presentation of licensure statistics by the Council of Medical Education and Hospitals of the American Medical Association, published in the May 8 issue of *The Journal* of the Association.

The report points out that "It is not known how many of these are at present in civilian practice. The annual number of deaths reported to the American Medical Association in 1942 was 3,353. It would appear, therefore, that the physician population in the United States last year was increased by 2,628. The greatest number in any one state, 1,147, was added in New York. More than 300 received their first licenses in California, Illinois and Pennsylvania. In thirteen states between 100 and 299 received initial licenses. Thirty states, the District of Columbia and Hawaii increased their physician population by fewer than 100. Nevada granted no original licenses during 1942. . . ."

The foregoing figures represent candidates examined in 1942 and immediately licensed, also those examined in previous years whose licenses were withheld for lack of internship, citizenship and other technicalities and issued in 1942, as well as those without a state license who were during the year certified on the basis of the examination of the National Board of Medical Examiners, government services, Canadian and foreign credentials. The majority, however, represent recent graduates.

The additions to the profession in 1942 were 269 more than in 1941.

From the United States there were added to the profession 4,811, Canadian schools 54, foreign faculties of medicine 835, medical schools no longer in existence 189, and unapproved schools 92. The largest number, 1,696, was added in the Middle Atlantic states. The East North Central group had a total of 1,061, the West South Central 693, the South Atlantic 638, the West North Central 558, the Pacific states 509, the New England group 403, the East South Central 313 and the Mountain states 98. Twelve were added to the profession by licensure in Hawaii.

"As a war emergency," the report says, "the medical schools of the country, with three exceptions, have adopted an accelerated program which provides for the utilization of the long summer vacation as a teaching period, and by continuing the schedule throughout the calendar year the four-year medical course is completed in three years. The medical practice acts in a number of states, however, preclude licensure of applicants who pursue medical training under the accelerated plan. . . ."

There were nine states in which amendatory legislation was considered necessary in order that candidates following an accelerated program of medical education might qualify for licensure. These were: Georgia, Illinois, Kansas, Maryland, Michigan, Nebraska, New Jersey, South Carolina and Virginia. The legislature of Virginia met in 1942 and passed a bill to remedy the situation there and the legislatures of the other eight states are meeting in 1943. Of these Kansas, Maryland, Michigan, New Jersey and South Carolina have already completed legislative action so that graduates, after accelerated courses, may obtain licensure. In Nebraska corrective legislation is pending but none has been introduced in Georgia or Illinois. The licensing board of Georgia has informed the office of the Council on Medical Education and Hospitals that requirements in the state do not prohibit licensure of physicians who have completed their studies under an accelerated program.

"The collegiate training programs," the report says, "now being formulated by the Army and Navy . . . provide for an acceleration of premedical education which may present licensure problems in the future, and additional legislation will be necessary in some states in order that a physician who has had less than the two-year premedical requirement may obtain licensure. . . ."

"Removal of physicians from civilian practice has resulted in a shortage of physicians in critical areas. To assist the physician attempting to relocate in such areas or in industrial sections of the country, it has been suggested that licensing boards modify their reciprocal and endorsement relationships and expedite licensure procedures. In eleven

states, namely Arizona, Arkansas, Delaware, Florida, Georgia, Louisiana, Mississippi, Nevada, Rhode Island, South Carolina and Washington, the medical practice acts provide for the issuance of temporary permits or certificates to practice medicine valid until the next ensuing examination. . . .

"In addition to the states named, the New Jersey medical practice act exempts from its requirements a lawfully qualified physician and surgeon of another state taking charge temporarily of the practice of a lawfully qualified physician of New Jersey during his absence from the state, on written request to the board of medical examiners for permission to do so. Pending legislation provides that such permission may be granted for a period of not less than two weeks nor more than four months and that the board of medical examiners, at its discretion, may extend such permission for further periods of two weeks to four months but not to exceed in the aggregate one year. In two states, Delaware and Nevada, legislation has been enacted providing for the issuance of temporary permits or licenses, valid generally for the duration of the emergency. In Pennsylvania and Maine similar legislation is pending. In Kansas and Vermont the proposals to authorize the issuance of temporary permits or licenses were defeated this year."

Eighteen states, Alaska, Hawaii and Puerto Rico require full citizenship and nine states naturalization papers as a condition precedent to taking the examination. In some states the requirement is by rule of the medical board, in others the provision is by statute.

In 1942 there were 1,630 applicants examined by twenty-four states and Hawaii, representing ninety-nine faculties of medicine and three licensing corporations of twenty-two European and four other countries as well as the Philippines. Of these 890 passed and 740 or 45.4 per cent failed. The largest group, 397, were graduates of the University of Vienna. They were examined in thirteen states with a failure percentage of 45.1. Nine states examined 111 graduates of the University of Berlin, of whom 50.5 per cent failed. The greatest number examined by any one state was 1,263 in New York, of whom 47.0 per cent failed.

A DOCTOR'S PLEA IN WARTIME

The doctor's life, in times like these,
Is not exactly one of ease.
For, on the home front, each M. D.
Is busier than any bee!
He's shouldering the burden for
The other does, who've gone to war.
This leaves your doctor precious little
Time to sit around and whittle.
And indicates the reason why
You ought to help the poor old guy.

How?

1. By keeping yourselves in the best of condition
Thus avoiding the ills that demand a physician.
2. By phoning him promptly when illness gives warning,
But—unless very serious—waiting till morning.
3. By cheerfully taking whatever appointment
He makes for prescribing his pills or his ointment.
4. By calling on him where he works or resides
Instead of insisting he rush to your sides.
(Of course, he'll come 'round when there's need for his service
But spare him the trip when you're nothing but nervous.)
5. And, last but not least, you can help in this crisis
By carefully following doctor's advices.

If these commandments you'll adhere to
A doctor's heart you will be dear to!

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During four years 1937-1940 tuberculosis caused more deaths in the United States than were caused by all the battles of all the wars in which this country has been engaged, beginning with the Revolutionary War and continuing through the first World War. Robert Plunkett, M. D., N. Y. State Dept. of H., Bull., Feb. 1943.

OBITUARIES

KENDALL J. HOCKER, M. D.

Dr. Kendall J. Hocker, physician and druggist, former postmaster, leader in civic and lodge affairs, and a past president of both the Sussex County Medical Society and the Medical Society of Delaware, died at his home in Millville on April 24, 1943, aged 66 years.

Dr. Hocker was born September 6, 1876, a son of the late Jacob and Mary A. Hocker. He lost both of his parents while a small boy but he succeeded in securing a good education. After passing through the public schools, he was graduated from the Wilmington Conference Academy, now Wesley Junior College, at Dover. He was graduated as doctor of medicine from the University of Baltimore in 1898. The next year he did post-graduate work at the University.

In 1900 he married Nettie L. West of Suffolk, Va., who survives him, as do three sons, Leslie M., in the U. S. Army; Leaton E., at home, and Kendall J., Jr., of Rehoboth Beach, and one daughter, Mrs. John Sanford Noble of Millville. He is also survived by two sisters, Mrs. Amanda C. Gledhill and Mrs. Nellie Magee and a half-brother, Dr. Ulysses W. Hocker of Lewes.

The funeral was held on April 27, 1943, with Hope Chapter, Royal Arch Masons, in charge. Burial was in Brotherhood Cemetery, Millville.

ARISTIDES J. MAVROMATIS, M. D.

Dr. Aristides J. Mavromatis, 54 years old, of Newark, a member of the staff of the Delaware Hospital, died on May 3, 1943, in that hospital from a heart condition and complications.

Dr. Mavromatis was graduated from Columbia University in medicine in 1929, served as an interne at Delaware Hospital in 1930 and 1931, and had practiced in Newark since that time. He was born at Smyrna, Greece, and came to this country about 20 years ago. He also attended New York University.

Surviving him are his wife, Mrs. Diane Mavromatis; a son, John; a brother, Spiros Mavromatis of New York City, and a sister living in Greece. Prof. James C. Kakavas of the University of Delaware was a cousin.

The funeral took place on May 6, 1943, with

services in the Greek Orthodox Church in Wilmington. Interment was in Silverbrook Cemetery, Wilmington.

BOOK REVIEWS

Attorneys' Textbook of Medicine. By Roscoe N. Gray, M. D., Surgical Director, Aetna Casualty and Surety Company. Second edition. Pp. 1486. Cloth. Price, \$16.50. Albany: Matthew Bender & Company, 1940.

This is the sort of book that the doctor seldom sees, but should. Written primarily from the insurance, compensation, and damage suit viewpoints, the book, as its title indicates, is aimed at the lawyers, but an equally desirable target would be the doctors also. This reviewer knows of no other book exactly like it, and of only a couple of others that even resemble it. Naturally, it will not answer *all* the questions that may arise in a given case, since it is not an encyclopedia; nevertheless it is almost fair to say "it has everything"—descriptive text, statistics, costs, fees, etc. These are items of as much value to the doctor as to the lawyer.

The chapter on "Consultations" is entirely too brief and sketchy, especially the section relating to ethics, which savors too much of "corporation practice" and too little of the rights of the attending physician. This is a dangerous attitude, especially in view of the recent tremendous advance in unionism and the liberalization of state compensation laws (Delaware did this only two months ago) allowing the patient (injured employee) practically free choice of physician.

The book contains no illustrations, but with it goes a small Atlas of Human Anatomy (pp. 86, with 80 illustrations, mostly in 8 colors) published by Barnes & Noble of New York, and which sells separately for \$2.25. These drawings from the University of Berlin and Johns Hopkins, are excellent. The index is something to talk about—a mere 28,000 entries, filling 222 pages!

This is a book for *every* doctor in clinical practice.

Psychosomatic Medicine. By Edward Weiss, M. D., Professor of Clinical Medicine, Temple University; and O. Spurgeon English, M. D., Professor of Psychiatry, Temple University. Pp. 687. Cloth. Price, \$8.00. Philadelphia: W. B. Saunders Company, 1943.

This book would serve as an excellent text-

book for the medical student and general practitioner. Its concept of psychiatric reactions is clear and readily understood. It is also of value to the practitioner and psychiatrist who is inclined to be biased in his psychiatric viewpoint, as it offers much new material clearly and plainly, and is readily understood. One can recommend it to all physicians, since all are in need of a broad psychiatric understanding of their patients. It is not technically difficult to read, and though somewhat biased in itself, in connection with other concepts of psychiatry it is of great value, and can be considered as essential reading if the physician desires a broad knowledge of psychosomatic medicine.

Autonomic Regulations. By Ernest Gellhorn, M. D., Professor of Physiology, University of Illinois. Pp. 373, with 50 illustrations. Cloth. Price, \$5.00. New York: Interscience Publishers, Incorporated, 1942.

This book shows profound study and research in the subject offered. It is extremely technical but offers essential knowledge of the autonomic nervous system for the psychiatrist and neurologist. At the same time it would seem that explanations could be simplified so that it would be of more interest to all physicians. However, the data offered is invaluable and offers new lines of thought in regard to physiological and psychological reactions of the individual. The book shows the result of broad reading and intensive study. The effects of insulin shock therapy and blood chemistry are carefully studied in connection with the secretion of other endocrine glands.

Fundamentals of Psychiatry. By Edward A. Strecker, M. D., Professor of Psychiatry, University of Pennsylvania. Pp. 201. Cloth. Price, \$3.00. Philadelphia: J. B. Lippincott Company, 1942.

Dr. Strecker again writes a book which cannot be surpassed. This book portrays his keen understanding and sympathy in regard to human nature. True, it is a hand-book and as such is meager, but it contains a knowledge and understanding which is profound. His kindness cannot be over-estimated, and this is revealed in his book. It would seem to me that this book is a must, not only

for the practicing psychiatrist, but also of all physicians and medical students. Dr. Strecker is a leader in the subject of psychiatry and his written word should be known by those interested in medical work. He has the ability to clarify psychiatry in a few well chosen words, which ignore no schools of thought but incorporate all into a workable, practical text.

The Principles and Practice of Obstetrics. By Joseph B. DeLee, M. D., late Professor of Obstetrics and Gynecology, University of Chicago, and J. P. Greenhill, M. D., Professor of Gynecology, Cook County Graduate School of Medicine. Eighth edition. Pp. 1101, with 1074 illustrations, 209 in colors. Cloth. Price \$10.00. Philadelphia: W. R. Saunders Company, 1943.

A new edition of DeLee is always welcome, and this eighth one, entirely reset, is no exception. The latest teachings in this field have been incorporated and necessary revisions made. The illustrations are excellent, especially the unusually large number in colors. Despite the death of the senior author, the book still stands as one of the two or three best American texts on obstetrics.

Fundamentals of Immunology. By William C. Boyd, Ph. D., Associate Professor of Biochemistry, Boston University School of Medicine. Pp. 446, with 45 illustrations. Cloth. Price, \$5.50. New York: Interscience Publishers, Incorporated, 1943.

This book gives a thorough portrayal of the fundamental mechanisms of immunological reactions and their theoretical foundations. As such, with its bibliography, it is essential to teachers and investigators in fields using immunological and serological methods. On the other hand, as an example of its practical information, may be mentioned a "Table of Blood Groups of Off-spring Possible or Impossible from Any Mating Combination." For the medical student it offers a thorough understanding of the fundamentals underlying antigen-antibody reactions and their application to medicine, and this without cluttering up the presentation by using the historical approach. All in all the book presents much valuable information to a wide variety of students and specialists.

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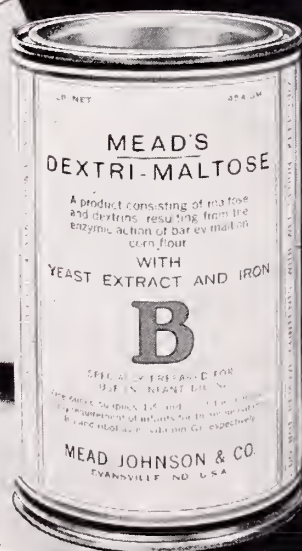
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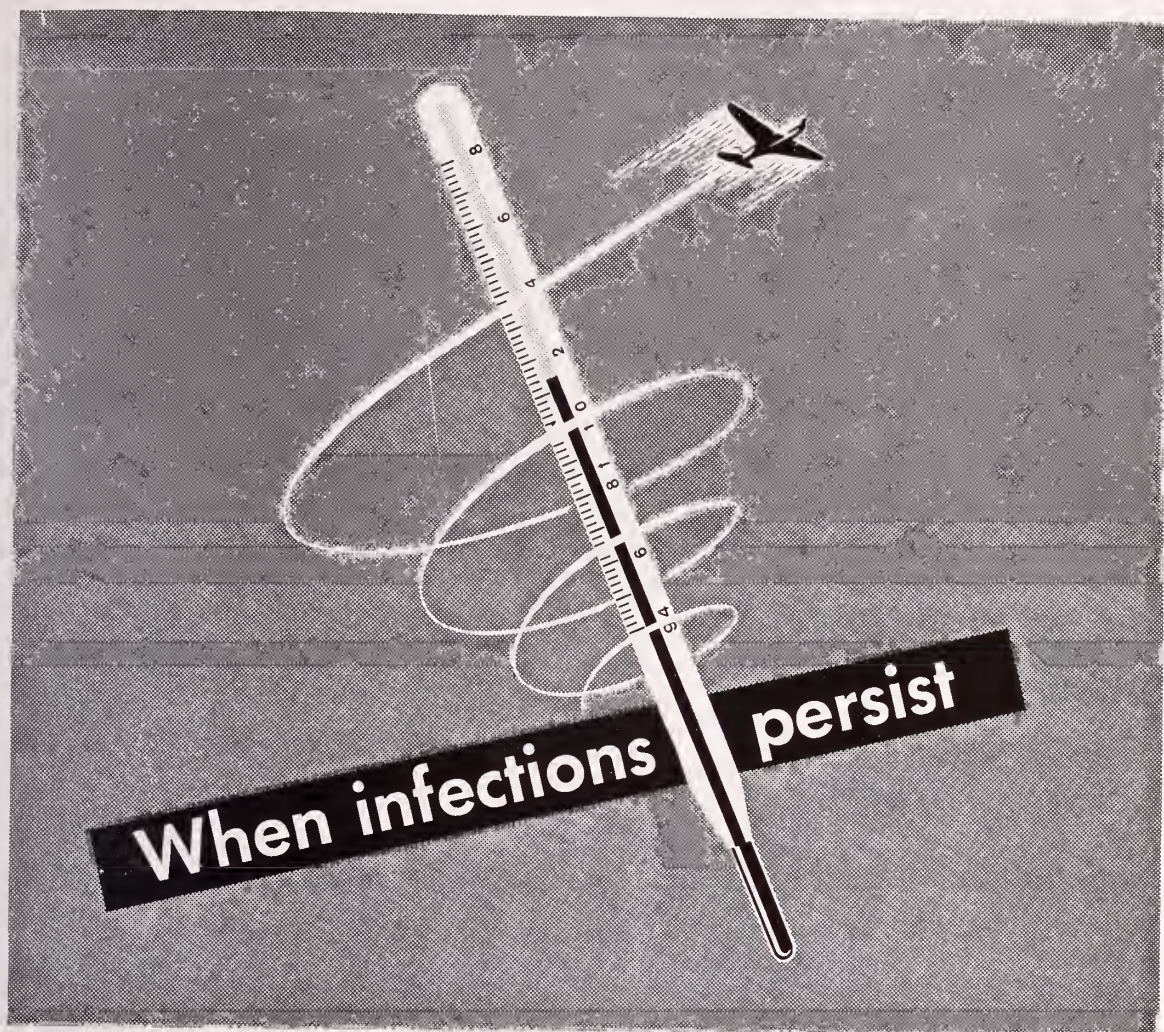
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**Laryngoscope*, Feb. 1935, Vol. XLV, No. 2, 149-154. *Laryngoscope*, Jan. 1937, Vol. XLVII, No. 1, 58-60. *Proc. Soc. Exp. Biol. and Med.*, 1934, 32, 241. *N. Y. State Journ. Med.*, Vol. 35, 6-1-35, No. 11, 590-592.



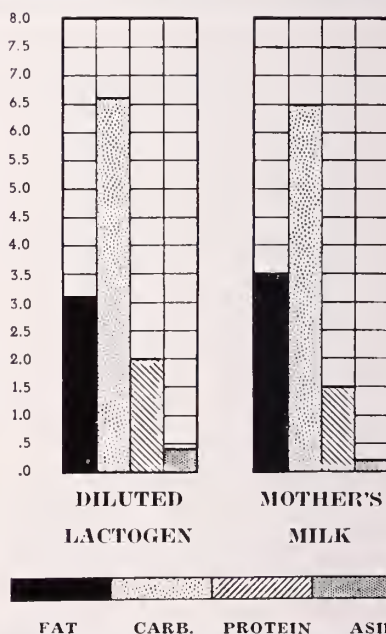
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Clinical Pediatrics, p. 156.



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Kantor, J. L.: Digestive Disease and Military Service, Jnl. A. M. A., Sept. 26, 1942.

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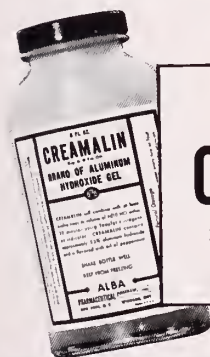
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When I had finished, she said she would certainly speak to George about using S-M-A as a routine formula.

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PRIMARY GLAUCOMA* **Its Etiology, Symptoms, Diagnosis**

W. O. LAMOTTE, M. D.†
Wilmington, Del.

Glaucoma is a destructive disease. It is of frequent occurrence. de Grosz of Budapest states that more blindness results from glaucoma than from syphilis, tuberculosis, gonorrhea or even injuries. It has been stated that of all blindness in the United States 4.6 to 6 per cent is caused by glaucoma. More accurate accounting of data in recent years, according to the executive director of the National Society for the Prevention of Blindness, indicates that 11 per cent is caused by glaucoma. Since the major portion of this paper was written, originally prepared for and presented before ophthalmologists, Harry Gradle has written an editorial in the American Journal of Ophthalmology in which he states that of all the blindness in the United States between 15 and 20 per cent is due to glaucoma, and that this fact is not entirely comprehended by the ophthalmologists of the country. The disease is not diagnosed, first, because non-medical refractionists practically never diagnose preglaucomatous cases; second, because of incompetent medical men practicing ophthalmology; third, because of neglect by the patient of failing vision in one eye; fourth, because family physicians are not as cognizant of glaucoma as they should be. Blake of New Haven calls glaucoma "cancer of ophthalmology"—not, of course, cancer of the eyes. It is comparable to cancer in that we do not know its cause, we do not know when it begins, and the same question, "Can you cure it?" may be asked. General practitioners and the lay public should be familiar with the cardinal symptoms of glaucoma so that patients may present themselves for diagnosis early enough to arrest the disease. The marked decline of blindness from ophthalmia

neonatorum over the past 35 years should make us think that through cooperation of the members of our profession a much lower percentage in blindness from glaucoma may be attained.

What can we say about the causes of glaucoma? The condition is usually called hardening of the eye. Hippocrates recognized hypertension but it was not until after von Helmholtz invented an ophthalmoscope that cupping of the disc was recognized. The accepted view by ophthalmologists is that glaucoma is a disease characterized by increased tension of the eyeball, that this is produced by a narrowing or closure of the pathways of exit of the fluids from the anterior part of the eye, and that, failing reduction of this tension by the use of miotics (and more especially pilocarpine), an operative procedure relieving this tension is the only means of relief. Magitot of France and a growing number of writers, Frank Park Lewis points out, are accepting the view that the closure of the anterior pathways is due to the increase in the amount of the intraocular fluids and is a consequence rather than a cause of the disastrous series of events accompanying the disease. But what increases the amount of the intraocular fluids?

Schmelsers¹ published some studies he made on the intermediate metabolism of patients with and without glaucoma. He found a large majority of patients with glaucoma had a pronounced hypercholesteremia and many gave a positive xanthoproteric reaction and impairment of hepatic function. He tested 78 with glaucoma and 70 without. Impairment existed from the fact that during tolerance tests with amino acids (aminoacetic acid) the deaminization was retarded in contradistinction to controls of the same age. He thinks that hepatic disturbances play an important part in glaucoma.

* Read before the Medical Society of Delaware, Dover, October 13, 1942.

† Ophthalmologist, Delaware Hospital.

(1) Archiv fur Ophth. (Dec., 1939)

Luedde² has called attention to the probable function of the capillary epithelium of the small blood vessels in the eye, and the probable escape of fluid through the permeability of the peripheral cornea, as a factor in glaucoma. He calls attention to the report of Kirwan on the outbreak of epidemic dropsy in Calcutta, 1934-35, during which time Kirwan saw in his hospital 1,695 cases of primary glaucoma in association with this disease. Very high tension occurred in both eyes. There was no lowering of the tension by miotics, normal or deep anterior chambers were present, there was absence of any inflammations or external signs of congestion, and the condition occurred in persons irrespective of age. The toxemia is apparently caused by parboiled rice, as patients quickly recover after the stoppage of rice in earlier cases, and relapses occurred when the rice was resumed.

Barkan believes that the production of blockage of the sclero-corneal trabecula by formation of pigment or the migration of iris pigment is an important cause. This seems to be borne out in the case of Negroes, who have lots of pigment and in whom glaucoma is very destructive, very frequently resulting in blindness in spite of anything that is done. With a prismatic contact glass and a corneal microscope the angle of the anterior chamber can be inspected. This procedure is known as gonioscopy of Troncoso. If the angle is open and access to the walls of Schlemm's canal is free, miotics reduce tension through neurogenic or vascular action, Barkan claims, rather than mechanically by changing the configuration of the angle. The majority of cases studied have shown an open angle. The type in which the angle is narrowed is benefited mechanically by miotics pulling the iris away from the entrance to the angle. Studies of this angle have shown that adhesions are probably the cause of obstruction of the flow of fluid rather than obstruction of Schlemm's canal being the cause of the adhesions.

The condition of glaucoma is not all due to a single factor. The activities of all organs are controlled and maintained by a regulatory mechanism in which the main factors

appear to be chemical, neurogenic and hormonal (Duke-Elder). Duke-Elder and others think that primary glaucoma apparently is not a local disease but seems to be a local manifestation of some general condition not yet known.

CLASSIFICATION OF GLAUCOMA

1. Primary Glaucoma:
 - a. Acute inflammatory, or acute congestive, or acute uncompensated.
 - b. Chronic inflammatory, or chronic uncompensated.
 - c. Chronic simple, or chronic noninflammatory, or compensated.
2. Infantile (hydrophthalmus or buphthalmus).
3. Secondary—to acute iritis, uveitis, choroiditis, cataract, injuries to lens, tumors, thrombosis of central vein, glaucoma capsulare (secondary to exfoliation of the lenticular capsule), etc.
4. Absolute.

This paper, as stated in the heading, is confined to the discussion of primary glaucoma, and primary glaucoma means a glaucoma the cause of which is not yet known.

ACUTE INFLAMMATORY GLAUCOMA

Acute inflammatory or acute uncompensated glaucoma occurs usually in one eye, more frequently in women than in men (about three to two), and in older people (38 to 70 years), and more in hyperopes. It is usually seen in the thin and wiry individual. It sometimes occurs in families.

We find in textbooks three factors as the probable etiology in the production of the clinical picture of this form of glaucoma:

- (a) The anatomical construction of the eye, as in the small eye of hyperopia with an increased angular acuity of the anterior chamber.
- (b) The interruption of the pressure regulating mechanism.
- (c) A temporary rise in systemic blood pressure.

The choroidal vessels are under the control of the sympathetic nervous system. When this is out the vessels are filled, and the choroidal space can be increased four times in size. This may be done by a big meal, alcohol, anger, worry. The sympathetic nervous system can be stimulated with adrenalin, which

(2) Amer. Jour. Ophth. (April, 1940)

will contract the vessels. Under normal conditions the sympathetic system takes care of the blood supply and causes contraction and emptying of the vessels.

Symptoms

Usually there are prodromal symptoms lasting for a short time (from one to three hours) and several months apart, and these may occur intermittently for years before the acute attack appears. These prodromal symptoms frequently occur with conditions that upset the vasomotor balance, such as worry, sleeplessness, fatigue, and constipation, and occur commonly in the morning. Vision becomes temporarily misty for a short time, rings appear around lights, and localized headache is frequent. The eye reveals a pericorneal flush, a steamy cornea, usually a dilated pupil, and raised tension. These cases usually pass into a chronic congestive glaucoma or into an acute crisis or real attack. In this we find the patient in intense unilateral pain, radiating through the head and most intense along the trigeminal nerve. There is nausea and vomiting. Lids are edematous. The bulbar conjunctiva and scleral vessels are much congested. The cornea is steamy, the anterior chamber shallow, the pupil partly and irregularly dilated and fixed to light. Vision is greatly reduced, due largely to clouding of the media and disturbance of the retinal circulation, and blindness may result in a very short time. The dilated and irregular pupil may be the one sign to distinguish the condition from secondary glaucoma due to iritis, in which case the pupil is contracted.

Acute iritic symptoms are usually gradual, acute glaucoma sudden. The differentiation, however, is sometimes difficult even for competent ophthalmologists, requiring history taking, experience, etc. to make a proper diagnosis. The eye grounds can not usually be seen, but if seen the optic disc is hyperemic. The tension of the eyeball is much increased. Sometimes acute glaucoma is mistaken for acute conjunctivitis. The history and symptoms are entirely different. In conjunctivitis the pupil is not dilated and fixed and there is usually pus, and there is no increase in tension. The physician can compare the tension of the two eyes with his fingers, and it is not difficult to note the dif-

ference in these acute cases. When taking the intraocular tension by palpation have the patient look down, then alternate pressure is made on the globe through the lids by the two index fingers, and so a relative idea of the resistance of the eyeball can be obtained. In acute purulent ethmoiditis with rupture into the orbit, which is rare, pain may be severe, but if the nose is examined the nostril will be seen to be blocked and pus will be found. Do not mistake acute glaucoma for a bilious attack or stomach or gall-bladder trouble.

CHRONIC INFLAMMATORY GLAUCOMA

Chronic inflammatory or chronic uncompensated glaucoma occupies a position rather between the acute and chronic simple forms. The symptoms and inflammatory signs are much less than in the acute. The pupil is somewhat dilated and does not respond. Rises of tension may occur when the symptoms flare up. Cupping of the disc may occur quite early, contrary to the slowly progressive excavations of compensated. There may be an apparent physiologic cupping. If cupping is present it may be of the shallow saucer type, or the pressure may force the lamina cribrosa back and produce a typical pot-shaped glaucomatous cupping, extending to the temporal disc margin with vessels disappearing over the overhanging margins and reappearing on the floor of the excavation. This cupping description also applies in the chronic simple form. Visual field disturbances may not be present.

CHRONIC SIMPLE GLAUCOMA

Chronic simple or chronic noninflammatory glaucoma is by far the most common form of the disease, and while it occurs more in hyperopes it occurs more in myopes than do the inflammatory cases and it is always sooner or later bilateral. There is no inflammation seen and no pain. Rapid loss of accommodation is significant; in other words, the near point recedes. Field changes indicate actual presence of the disease and before the patient knows it there is contraction of the field, sometimes to almost a pinpoint, with good central vision still present. At first the pupil is normal both in size and reaction. One should go into the history of the case. When accommodation becomes uncertain, and

especially when there is rapid loss; when it is difficult to see after dark; when there are occasional light streaks, or when rings are seen around artificial lights; when there is temporary clouding; when there are headaches during the morning hours, or after an hour in a darkened room—all these suggest a transitory increase in intraocular pressure. Increase in pressure may also be caused by emotions, by excesses, by physical disturbances. An increase in tension to 38 mm. Hg. was found after a mountain climb (Gradle). Focal infection may produce a rise.

The preglaucomatous states are important to recognize, and require general care and medical treatment. When these preglaucomatous states are present and the tension lies on the borderline and the diagnosis is in doubt, provocative tests may have to be employed. The procedure might be as follows: Take tension, of course with a tonometer, then keep patient in a dark room and take tension again with as little light as possible—10 to 40 mm. Hg. rise. The patient may be given one or two cups of strong coffee—15 to 25 mm. Hg. rise in from 20 to 40 minutes. A good plan is to have a nurse, trained in tension taking, take tension every 2 hours at the patient's home. Tension is highest in the morning, but not much in normal eyes, which do not normally vary much during the day. If these tests are negative, then instill a drop or two of euphthalmine, and if tension is not increased in 3 or 4 hours it may be assumed there is no glaucoma. The writer has used 2% homatropine solution for this purpose, followed with eserine, and has never had any unfortunate effect from it. Tension, unless it is carried out somewhat as described above, is not the most important thing in arriving at a diagnosis of glaucoma. Green of San Francisco has obtained good results in scleral trephining in cases of keratoconus, and has come to the conclusion that the tension of that particular eye has been too much for it, although measured by the tonometer it may or may not be high. He believes that a given eye with a high refractive error, combined with marked muscular insufficiency and with poor ocular drainage, will, under pressure on the globe by the recti muscles and the lids, give way through the cornea. In other words,

he considers keratoconus a form of glaucoma in which the pressure is exerted against the cornea rather than the optic disc.

The normal tension of an eye is that pressure which the tissues of the eye are able to withstand without impairment of function or damage to the tissues. The tension tolerance of the eye has been exceeded if repeated measurements show increasing abnormalities of the central field or contractions of the peripheral field or decreasing central visual acuity. Progressive loss of function due to hypertension is manifested first by abnormalities in the central visual field, by contraction of the peripheral visual field, and finally by decrease in central visual acuity. Of course, look for cupping, but don't wait for cupping before making a diagnosis. Optic atrophy and absolute glaucoma come later.

A careful map of the field of vision in glaucoma is very important. A nasal contraction, a partial or complete loss of the nasal field or of the upper or lower quadrant of the nasal side, very frequently is one of the earliest changes. This is explained by the fact that the blood supply from the central retinal artery is carried by a longer and more cir-

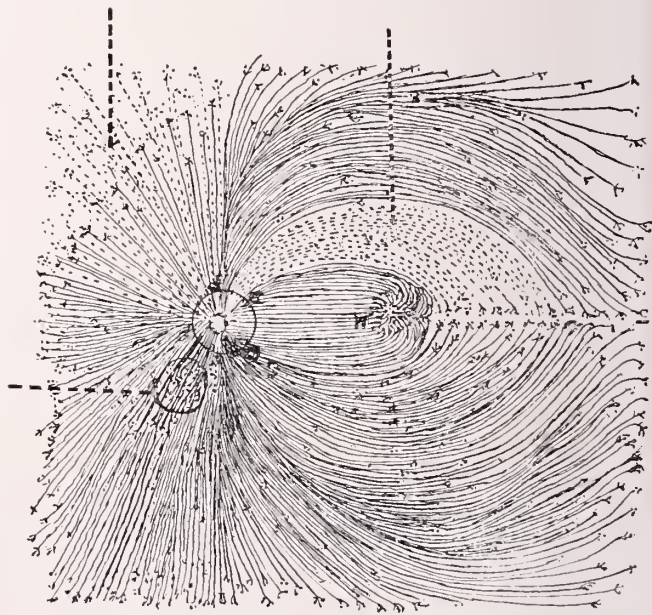


FIG. 1. Schematic representation of the topography of the nerve fibers of the retina. From Troncoso's "Internal Diseases of the Eye and Atlas of Ophthalmology." By permission of the publishers, F. A. Davis Company, Philadelphia.

cuitous route to the temporal than to the nasal side, and the nerve fibers are decidedly arched as is shown in Fig. 1, and in B. T. Lang's specimen in Fig. 2 which beautifully shows the course through the distribution of persistent medullary nerve fibers. One, however, should not be satisfied with the examination of the peripheral field with a perimeter. A careful examination of the central area and blind spot should be made on a tangent screen, or the blind spot may be outlined on a campimeter. Seidel's scotoma consists of a wing-shaped extension of the blind spot upward or downward or both, and is one of the earlier signs. This progresses into the arcuate or Bjerrum scotoma and extends and ends at the horizontal raphe, and results in a Roemie step which is produced when either the upper or lower arching nerve fibers are most damaged, the inequality producing a step. This step is usually late. A Bjerrum may begin as a scotoma above or below the

a large temporal patch. Central areas may be contracted to 10° or less and vision still be good. This has been called gun-barrel or tubular vision. There are other scotomas but those mentioned are the ones usually found in glaucoma.

It might be asked why does the macula escape? There are a great many nerve fibers supplying the macular area. The papillo-macular fibers in the nerve head comprise about one-fifth of the entire nerve and are distributed to a very small area, and so a sufficient number may remain intact to preserve useful central vision until the last. In chronic inflammatory glaucoma, however, central vision becomes involved fairly early. Waite, Darby and Kirk have reported that the rate of dark adaptation is invariably retarded in the glaucomatous eye, and early in the disease. It can be tested by the examiner comparing his rate of adaptation with the patient's on the minimal readings of a foot-candle meter after both have set five minutes in the dark room.

Report of a case to illustrate the importance of an early diagnosis, and to illustrate the procedure in diagnosis:

Mrs. C., age 62 years, came to me July 24, 1939, for refraction. I had never refracted or examined her eyes before. Vision without glasses was 6/30 for right eye and 6/50 for the left. With her glasses, which she had had five years, her vision was 6/15 for right eye and 6/10 for left. She had compound hyperopic astigmatism. There was a need for a change of lenses, which correction brought vision up to 6/6 for each eye. The anterior chambers were observed to be rather shallow and by palpation the tension

was increased. Pupils were round, equal, about 4mm., and responded to light and convergence. There was some bending of vessels over the margins of the discs. Tension was 32 mm. Hg. for each eye. After the patient spent $\frac{3}{4}$ hour

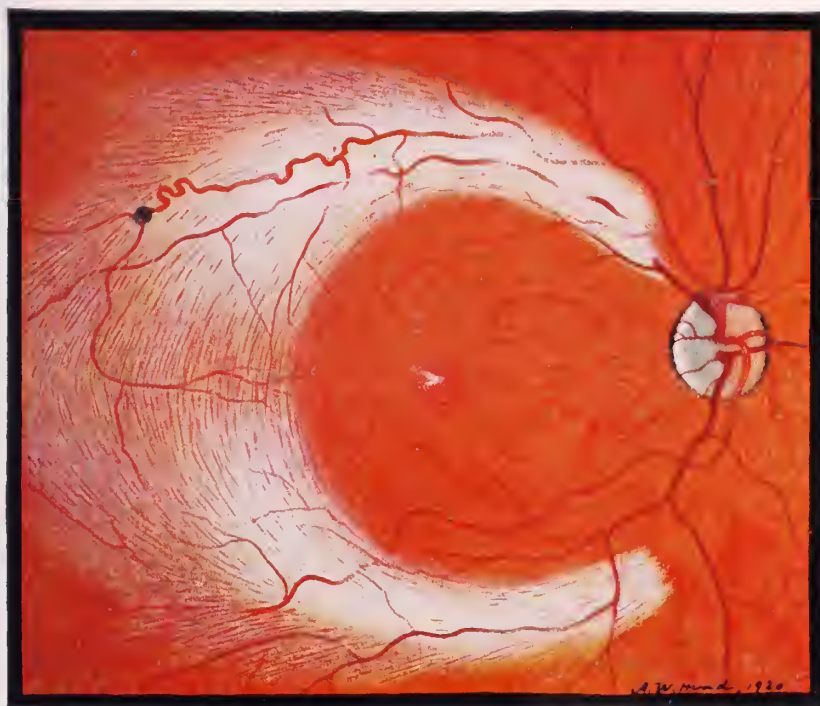


FIG. 2. An unusual case of medullated nerve fibers, which also illustrates the normal distribution of the retinal nerve fibers. From Peter's "Principles and Practice of Perimetry." By permission of the publishers, Leo and Febiger, Philadelphia.

point of fixation. Should a double Seidel's and Bjerrum's scotoma extend along the arcuate fibres until its ends unite it is called an annular scotoma. Advanced cases show a field with a small central area and sometimes

in a darkened room with her eyes closed, however, the tension rose to 42 mm. Hg. in each eye. This is far more than the increase in a normal eye would have been. Visual fields

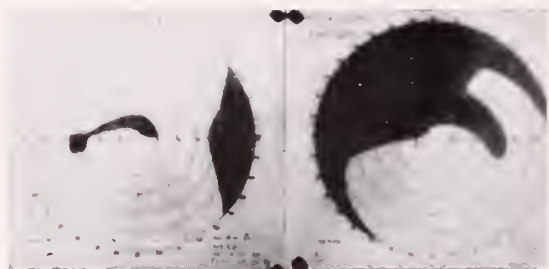


FIG. 3. Fields of patient taken July, 1939.

with a perimeter showed a loss of the upper nasal quadrant of the right eye and a Bjerrum scotoma of the left. A little later the tangent screen showed the picture seen in Fig. 3. The scotoma in the right eye had extended above the arcuate fibers to the periphery (Roenne's nasal step). The left eye showed a Bjerrum scotoma. A corneoscleral trephining was done on the right eye on November 7, 1939. A weak solution of pilocarpin is now being used. Tension runs between 28 and 32 for the two eyes, vision remains normal, and the fields have not changed.

CONCLUSIONS

Acute inflammatory glaucoma should be diagnosed and treated early because blindness may result in a few days. Do not mistake the condition for iritis and instill atropine. In iritis the pupil is contracted, and posterior synechiae may be present. Do not mistake this glaucoma for conjunctivitis. The early recognition of chronic glaucoma has been stressed because this form comprises about 90% of the cases. The later stage, where one can diagnose by questioning the patient or by feeling the eye and not even looking at it, has been omitted; i. e., the stage when the pupil is dilated and fixed, when the eye is hard, the fields contracted, and vision reduced or gone. Attention also should be called to the mistake made particularly by optometrists of calling glaucoma cataract. They are fooled because there is no inflammation seen, no pain, and vision is gradually reduced or lost entirely, and by the time that happens in one eye the other eye has usually advanced to such a stage that that is hopeless. Refractionists should test reactions of the

pupils, should note the depth of the anterior chambers, the appearance of the eye grounds, and palpate for tension. Some ophthalmologists take the tension with the tonometer of all patients past 40 years of age who come for refraction.

It should be repeated that progressive loss of function due to hypertension is manifested first by abnormalities in the central visual field, next by contractions of the peripheral visual field, and finally by decrease in central visual acuity; and that the tension tolerance of the eye has been exceeded if repeated measurements show increasing abnormalities of the central field or contractions of the field or decreasing central visual acuity. Degeneration of the nerve fibers may be arrested, but atrophy that has taken place cannot be regenerated, and when once optic atrophy starts it usually continues. Untreated glaucoma invariably leads to blindness.

There is another side that is of importance. If there are 30,000 people in the United States blind from glaucoma and it costs \$1.00 a day to maintain them, the annual cost would be more than \$10,000,000. If glaucoma is discovered in time and is given the proper treatment, it has been estimated that less than 8% become blind; so the 10 or 11 million dollars cost would be reduced to less than 1 million.

The family doctor is the first to see glaucoma, and if he does not recognize it the profession will have failed to that extent in its duties to the public, the country, and the profession. It is true that he does not have the armamentarium the ophthalmologist has, but he does not need it for his purpose in spotting early cases. He still has his tongue and his eyes and his finger tips which, as Gradle says, were all our forefathers in ophthalmology had.

DISCUSSION

DR. W. E. BIRD (Wilmington): I want to make one comment. In the Journal of the A. M. A. for September 29th there is described a very interesting case of glaucoma treated by a presumably competent oculist. Because he used his fingers to determine the tension he failed to diagnose the case as glaucoma. The patient went to another doctor who made a diagnosis with the use of the tonometer. The patient was given a diagnosis

of glaucoma. He later brought suit against the first doctor. The court decided, because the first doctor had used his fingers instead of the tonometer, that he was negligent in his practice and the patient was awarded a good round sum as damages.

DR. E. R. MAYERBERG (Wilmington): I would like to discuss Dr. LaMotte's paper. It may not be terribly interesting to most of you because of lack of interest in eye cases generally, however, his paper was magnificent.

He has done a lot of work on it and has presented it in excellent detail. Dr. LaMotte did not advocate taking tension only by the ophthalmologist. If the general practitioner suspected it he should, in all cases, particularly with eye tension, take the tension with a particular eye instrument. If we have a patient we suspect of being glaucomatous we take the tension.

Acute glaucoma is generally easy to diagnose. The patient notices the red eye and the terribly penetrating pain, not especially in the eye, but in that side of the head. As glaucoma is frightfully inoperative in the early stages every effort should be made to reduce the tension first. For two or three days use mydriatics every half hour or until the tension begins to decrease. Four or five days after the acute symptoms have subsided operative procedure may be instituted. Great care should be taken in operating: if the corneal section is made too rapidly the fluid gushes out and the lens is very apt to fall out too. Slow puncture first, to release the tension, and tension is usually permanently relieved. You can't say whether tension will be permanently relieved or not. Sometimes the patient will have recurrent attacks of glaucoma. He will have inflammatory adhesions in chronic cases.

Dr. LaMotte brought out a very interesting fact. If you have patients complaining that they are gradually losing sight, are going to someone for refraction every two weeks, glasses changed every two or three months, and no pain, regard that patient as a case of potential glaucoma, although it may be only a cataract.

After the optometrist gets through selling two or three pairs of glasses he usually says go to an eye man. Then we find changes in

the retina and in the optic nerve, but those cases are so far gone there is nothing that can be done about them. The optic nerve is destroyed.

If a patient has one glaucomatous eye the chances are, in a few years, the other one will be just about like that. Don't pay too much attention to the acute cases, but the chronic case, with difficulty in seeing at night, difficulty in reading, having to have glasses changed frequently, should be sent to a competent ophthalmologist.

MENINGOCOCCIC MENINGITIS*

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We are in the midst of a meningitis epidemic of major proportions. During the first few weeks of 1943 the reported cases in the United States exceeded any comparable period during the fifteen years such data have been available. During the first thirteen weeks of 1943, ending April 3d, 5,826 cases of meningitis were reported, this being six times the reported incidence for a similar thirteen-week period of 1942. These facts are mentioned not with an aim of producing alarm, but for the purpose of stressing the current importance of reevaluating our knowledge of the disease and its treatment.

Definition: Cerebro-spinal fever is a febrile infectious disease caused by the meningococcus, a gram negative diplococcus present in the nasopharynx in many well people, but also capable of invading the leptomeninges in sporadic cases and in epidemics. The disease of meningitis is characterized, commonly, by a comparatively sudden onset of headache, stiffness of the neck, vomiting, prostration, leukocytosis, general tenderness, photophobia, mental cloudiness, irregular respiration, herpes and an eruption, most frequently hemorrhagic. The first three symptoms of fever, headache and stiffness of the neck are usual. The others are less uniform in their occurrence.

Epidemiology: In the absence of epidemics of cerebro-spinal fever, its prevalence is difficult to determine. Meningococcic meningitis occurs in all large communities throughout the year as scattered sporadic

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cases, but the characteristic seasonal prevalence is in late winter and spring. The epidemic and epidemic peak both occur in January, February, March, April or May.

The disease is encountered both in the Tropics and in the Arctic region. Records exist of outbreaks in all civilized countries, particularly those of the north temperate zone. Interestingly enough, there have been more epidemics and heavier sporadic incidences in the United States than in any other nation. This is particularly true if one rules out all of the military epidemics of Europe. It has long been noted that the assembling of troops in barracks or of any group of people in any closely confined quarters for extended periods predisposed to the development of cerebrospinal fever.

Though the sharpest outbreaks of cerebrospinal fever is not in large cities, the heaviest incidences both sporadic and epidemic is in the urban communities, rather than in the rural. It may be said, therefore, that it is somewhat more characteristically a disease of the city where, perhaps, closer personal contact and poorer housing and living conditions may be an important factor. There is a greater prevalence of meningitis among males than among females, probably due to the greater frequency of massing large groups of men together. About half of the cases may be expected under the age of five years, but it is also quite prevalent during the early adulthood.

Predisposing Causes: The influence of age and of the assembling of large bodies of men in the barracks has been noted. In regard to the latter, two considerations may be of importance, intimate contacts as attested in the transfer of infection and the imposition of unaccustomed tasks causing a reduction of individual resistance. It is true that merely the assembling of rather large bodies of young men does not necessarily result in the outbreaks of meningitis as is observed at the beginning of the school years or colleges, it is seldom that one notes an outbreak of meningitis. However, these young men are not living in crowded sleeping compartments nor are they subject to any great fatigue. The question of over-crowding of living quarters is probably of paramount importance. This

statement is born out by the findings of the Baltimore Health Department. In a city survey of overcrowding, 4% of the population were said to be living under such conditions. In a study of the homes in which meningitis cases occurred, 1300 were classed as "overcrowded households." Cold and damp weather is thought to predispose to epidemics. However, it is certain that many outbreaks have not been correlated with particularly low temperatures or high humidity. There is no noteworthy relationship to explain other non-specific respiratory infection and the onset or prevalence of meningitis.

Manner of Spread: Cases of cerebrospinal fever usually occur, but sporadically and in epidemics, without demonstrable direct contact with other cases. Marked maps show a scattered distribution throughout the localities affected. Doctors, nurses or other patients do not ordinarily contract the disease from cases in the hospital. It is rare for more than one case to occur in a family, even though contact has been most intimate between the sick individual and other members of the family prior to the making of the diagnosis. The explanation for this peculiar distribution of an infectious disease is not easily made. Up until a few years ago it was felt that as long as the carrier rate in the general population did not exceed 20% there was little likelihood of an epidemic. Such views are not now held to be valid. Various studies have shown the carrier rate to range between 1% and 50% of the studied population group. The results are practically uniform, however, that persons who have been in contact with cases of meningitis are more likely to be carriers than those who have not, but many people who harbor the organism have had no known contact with the disease. Dudley and Bremman noted that at the Royal Naval Hospital in Catham, England, a carrier rate of 50% for agglutinable meningococci persisted for over a year without the appearance of a single case of meningitis; whereas at the Royal Naval Hospital at Portsmouth, during the same period, the carrier rate among contacts of sick patients with meningitis was only 5%. At the present time the significance of carriers and carrier rate is difficult to evaluate. Because of the high carrier to case ratio it

has been suggested that "the carrier constitutes the mass of the epidemic and the cases are an accidental minority."

Bacteriology: The specific etiologic agent of meningococcic meningitis is, of course, the meningococcus. It is an organism easily stained by the ordinary basic aniline dye, but loses its stain when decolorized by Gram's method and takes a counter stain instead. It may be found during the course of the disease in the blood stream, the nasopharynx, in the cerebrospinal fluid and in the petechial and ecchymotic rash on the skin. Nothing need be said concerning the morphological or cultural characteristics of the organisms in this paper.

The meningococcic organisms have been classified and grouped by various investigators, but with our present method of treatment, aside from academic interest, there is probably little of practical value gained by typing in a given case. Most epidemics are due to Group I meningococci. Some outbreaks have been due to Group II. Therefore, from the standpoint of epidemiologic study it might still be important to type contacts during an epidemic, but seldom as an aid to therapy. There is no reason to doubt that the meningococcus reaches the body and leaves the body by way of the nasopharynx where it is commonly found.

Symptomatology: Clinical history — Our former ideas of a more or less definite period of incubation for each infectious disease have been modified. In general the more highly contagious disease, the more definite the period of incubation. Because of the great variability of the apparent virulence of the meningococcic organism, it is difficult to determine any period during which an individual is most likely to develop clinical symptoms. The belief is held by some writers that every case of cerebrospinal fever is first a carrier and that by breaking down perhaps temporarily of the defense mechanism, the organism is able to invade the body and cause the disease. In instances where carriers have been isolated, clinical cases have occurred varying periods from their time of segregation ranging from one to forty days. Of course there is no way of knowing just how long these people had harbored the organisms in their

nasopharynx. In a study carried out in the British Navy, 485 carriers were kept under observation during an outbreak of meningitis, but not one carrier developed it.

On the rare occasions where more than one case occurs in the same family or among mess mates, among the troops, the period of onset may be separated by hours or months. The possibility of both cases being infected from a common source must always be borne in mind. More definite are the cases which develop in a previously non-infected district, after a visit to or from an infected focus. Such evidence places the usual incubation period in one to five days.

The clinical picture presented by cases of patients with cerebrospinal meningitis is varied. Clinical manifestations are those of a generalized infection and of meningeal irritation. The onset in a typical case is sudden with malaise, fever, nausea and vomiting, chills, headaches and a stiff neck, with the other evidences of increased intracranial pressure. Nasopharyngitis may or may not proceed the illness, but if present, is usually due to some organism or virus other than the meningococcus. Skin manifestations, especially petechial hemorrhages and other forms of rash are found most often during epidemics and may occur in from 10% to 70% of cases. Patients with a fulminating form of this disease may present the picture of a collapse associated with Waterhouse-Friderichsen syndrome. In a small percentage of cases the presenting symptom may simulate acute polyarthrititis or as a recurrent gastrointestinal disorder.

Mode of Onset: The onset is as a rule such that the patient has had enough fever and prostration to be kept in bed within 24 hours of the first clear symptom. Ambulatory cases with true meningeal headache are unusual. A normal temperature may be retained for several days and may delay the diagnosis. One must not overlook the fact that in certain very virulent cases the individual may retire feeling well, but die of the disease during the night, the first intimation of the cause of death being found on post-mortem.

A chill with rigor or a convulsion in an infant frequently ushers in the disease. The chill may be replaced by a chilly feeling and

malaise or this period of invasion may be so masked or so soon succeeded by definite meningeal symptoms or unconsciousness that it escapes notice. The convulsions are not usually prolonged beyond the first day and they are very rare in adults. Vomiting occurs in more than half the cases at or soon after the onset. Through this symptom, together with a not uncommon abdominal pain in children, often directs attention to the gastrointestinal tract. The vomiting usually is not preceded by nausea and frequently bears no relation to meals. The vomiting is a symptom of the initial stage and is not usual thereafter in contrast to other cerebral diseases.

Objective Symptoms: Usually the first definite meningeal symptom in the adult is a headache. This may be referred to any or all parts of the cranium. Frontal headaches frequently give way to occipital as the disease progresses. It cannot at first be differentiated from an ordinary headache accompanying any general infection or toxemia; the headache of cerebrospinal fever typically becomes an intense one with most persistent symptoms. The headache frequently becomes one of the most prominent symptoms unless supplanted by delirium or mental dullness or unless relieved by treatment. It is not stopped by ordinary methods. If the patient knows by experience the improvement following lumbar puncture, he may beg for the latter. The fact that this characteristic symptom is definitely absent in some cases is to be remembered.

The mentality at onset and in the early stages may be normal with allowance for the prostration, pain and mental apprehension. Commonly the patient is either hypersensitive and irritable or dull and unresponsive, though in the epidemic cases there may be delirium, stupor or collapse when first seen. During the height of the disease a case of average severity may be expected to be deeply stuporous with some delirium, but without complete coma. Vertigo or double vision is occasionally found.

Physical Findings: The most important sign of meningitis is stiffness of the neck or resistance to flexion. In eliciting this sign the examiner should proceed with all gentleness, especially in the cases of children. It is well to secure the history and make other less

important and less painful examinations first in order to gain the confidence of the patient. Rotation of the head from side to side should be attempted, though lateral rigidity is not so significant as antero-posterior. To determine the latter, with the patient lying on his back, the hand of the examiner should be inserted between the occiput and the pillow, palm up and gently raised. Unless the condition is marked, one examination is not sufficient, but another attempt to flex the head should be made at the conclusion of other tests. Unlike a rigidity of less serious import, a neck rigidity of meningitis does not loosen up on manipulation. The stiffness of the neck may be so marked that some retraction or opisthotonos is visible.

Of almost equal importance with the information obtained by attempting to bend the neck is the phenomena known as Kernig sign. This is a resistance of passive simultaneous flexion of the hip on extension of the knee. Any limitation of extension to an angle of 135 degrees or less at the knee may be considered a positive Kernig. It must be remembered that in elderly people the positive Kernig sign is normal and not indicative of disease.

It is well to do general neurological reflex studies although they are not of great help in the diagnosis of meningitis. Deep reflexes are usually exaggerated at the onset of the meningeal involvement. The superficial reflexes are dulled, but often changes occur in the opposite direction.

A more important finding in the patients who have a severe degree of illness, who are still conscious, is the generalized hyperaesthesia in the skin and the deeper structures which is present in many cases. The secondary effect in this generalized tenderness is apprehension, irritability. The patient shows a disinclination to be handled or to be moved. Ophthalmoscopic examinations usually gives little information. Pupils are usually dilated and react sluggishly. They may be unequal or they may be contracted. Deafness is not infrequent in the disease and is often central in origin.

Temperature in cerebrospinal fever at the onset is typically high, but there is nothing constant or diagnostic in the chart, although

irregularities are very common; temperature is a poor guide in condition or prognosis. Pulse is often rather slow in proportion to the temperature and shows variations independent of the temperature. This is, of course, the result of changes in the intracranial pressure.

The most frequent skin manifestations in cerebrospinal fever, probably is herpes, occurring around the mouth and nose. It usually does not appear before the third day. It may occasionally be widespread. Herpes has no prognostic significance. Typical eruption of the disease is hemorrhagic, the spots varying in size from those of flea bites to enormous splotches in different cases, showing much variation in the individual case. The eruption is usually in sporadic cases. In many epidemics it is observed in less than 50% of the cases. The cases showing eruption are as a rule more severe than those without an eruption. However, the mortality difference is not great.

Diagnosis: The diagnosis of meningococcus meningitis depends upon the findings of some or all of the above mentioned signs or symptoms and additionally one usually finds an elevated white blood count which may range from normal up to 25 or 30,000 with a very high polymorphonuclear-neutrophile count. Some cases may show 95% to 97% polymorphonuclears to be present. However, one must not withhold a diagnosis simply because the count is not markedly elevated. We have seen cases of meningococcus meningitis with counts ranging from between 8 to 10,000.

Lumbar puncture is probably the most important single diagnostic procedure done to determine accurately the diagnosis of meningococcus meningitis. It may be performed for two definite reasons. First and most important is the examination of the spinal fluid to determine the organism present, the cell count and the various chemical properties of the spinal fluid. The other reason, less important but often helpful, is following the course of the disease from a menometric determination of the spinal fluid. The normal range in the adult is generally from 100 to 150 mm. of water, depending to a certain extent on the degree of relaxation of the patient during the operation. The initial pressure

reading of persons when first seen with meningitis may go above 500 mm. of water. In these cases with high pressure care should be exercised in the removal of fluid. It should be removed slowly and not in amounts that would lower the pressure below one-half of the original reading. The pressure is not always markedly increased. In some cases of coma or those in a wild maniacal state one may have a spinal fluid pressure of only 250 mm. of water.

The cell count very early in the course of the disease may be low. It may be possible early in the disease to find by cultural methods the presence of the meningococcus organism in the spinal fluid and still have no increase in the number of white cells present. In these instances the pressure is most always elevated. However, as a rule at the time that the lumbar puncture is done, one finds an opalescent or cloudy fluid with the cell count ranging from a few hundred up to two or more thousand cells. On spinning the spinal fluid in a centrifuge and making a direct smear from the sediment, one can in the majority of instances find gram negative intracellular diplococci present. He is then in a position to make an almost certain diagnosis of meningococcus meningitis. However, aside from the treatment, it is always well in the laboratory to culture a sample of the spinal fluid and to run the organism recovered through sugar to determine exactly the nature of the gram negative organism. We know that meningococcus, gonococcus and catarrhalis all have a similar morphological appearance. This, however, is not waited for by the clinician. As soon as the presumptive diagnosis of meningococcus meningitis is made he should institute treatment.

A word should be said about the advisability of doing lumbar puncture in the presence of a severe rash without stiffness of the neck or any other manifestations of meningeal irritation. There have been two schools of thought on the matter and probably the question is still an open one. There is a belief based on careful clinical studies that when spinal punctures are done on bacteremic patients who do not have a meningitis a meningeal infection will follow. On the other hand, Frey recently reviewed 207 cases of

pneumococcal meningitis in order to determine whether lumbar puncture was a factor in the pathogenesis of its development and concluded that "The incidence of meningitis is no greater among patients with bacteremia who were subjected to lumbar punctures with the yield of normal cerebral spinal fluid than among those for whom no diagnostic tap was performed." The same conclusion can probably be applied to meningococcal meningitis although proof is lacking. Dingle and Finland believe that blood is cerebrospinal fluid for bacteriological examination should be obtained immediately from every patient in whom meningitis is suspected. They base their opinion on the following consideration:

1. "There is no clear proof that lumbar puncture results in meningitis, the patient in whom meningeal infection would not otherwise have developed."
2. "With proper precautions the procedure does not in itself endanger the lives or subsequent recovery of the patients."
3. "Clinical diagnosis alone is not sufficient fool-proof since some patients may have definite, even extensive, meningeal infection without the pathognomonic signs of such involvement."
4. "Early diagnosis followed by prompt and adequate therapy increased the patient's chances for recovery."
5. "Any risk of inducing meningitis, if it exists at all would be minimized by sulfonamide which would undoubtedly be instituted in almost every case in which such an infection occurred."

It is felt, therefore, by most of the workers in the field at the present time that the dangers of waiting to make a diagnosis of meningitis outweighs the dangers from doing a lumbar puncture with the theoretical possibility of introducing the organism into the spinal fluid by virtue of the diagnostic procedure.

Therapy: The treatment of meningococcal meningitis falls under three headings:

1. Chemotherapy
2. Serotherapy
3. Symptomatic treatment and treatment of complications.

Chemotherapy: Soon after the recognition

of the effectiveness of the sulfanilamide against the hemolytic streptococcus, Saddle, Gray and Stevenson reported good results from its use in experimental meningococcal infection in mice. Since that time in 1936 sulfanilamide and several of its derivatives have been so successfully employed in treatment of cerebrospinal fever that they have largely replaced serotherapy. While sulfanilamide, sulfapyridine, sulfathiazole and sulfadiazine have all been found therapeutically effective when used individually or in combination with serum, it is at present generally agreed that sulfadiazine because of its low toxicity, ease of administration and uniform effectiveness is the drug of choice administration. Sulfadiazine may be administered orally, intravenously or subcutaneously. The oral route is the method of choice, but in meningitis, with or without coma, it is important that an effective therapeutic blood level be reached as quickly as possible. In such instances sodium sulfadiazine is especially useful. It can be administered intravenously as a 5% solution in distilled water or in normal saline. It is excreted by the kidneys more slowly than is either sodium sulfapyridine or sodium sulfathiazole. Because of this fact it is possible by repeated injections at 8-hour intervals to maintain a satisfactory blood level. Oral administration of sulfadiazine should be started as soon as it is possible for the patient to swallow the tablet. In instances of coma when the sodium sulfapyridine is not available, the drug may be given by injecting a suspension of the crushed tablet through a nasal tube. This is a very useful procedure at times and may be life-saving. Sodium sulfadiazine may also be given subcutaneously in a 0.5 to 2% solution. The sodium salts are quite alkaline and are extremely irritating. If they are injected outside the vein, the solution having a concentration greater than 2%, they would cause local tissue damage. They must never be used intrathecally as their alkalinity will cause irreparable damage to the nerve tissues.

Dose: The initial dose of sulfadiazine for an average 150-pound man should not be less than 4 gms., preferably 5 gm. This should be followed every four hours by one gm. or every six hours by 1½ gms. If one wishes to

continue intravenous administration for the first 24 hours after the initial injection of 5 gms. of sodium sulfadiazine, the patient should be given 2 gms. every 8 hours. At the end of 12-18 hours, when possible, a blood level determination should be done. It may be found necessary to increase the size of the oral dose or to add an extra gram or two of the drug intravenously to bring the level to a satisfactory therapeutic point. A similar dosage scheme is followed for subcutaneous administration.

Blood Level: There does not appear to be a universally effective blood level because of individual variations in response to the drug. Some patients appear to do well and a cure is effected when the blood concentration does not exceed three or four mgs. per 100 cc., while others appear to require 8-10 mgms. per 100 cc. Sutides have revealed that on an average, a concentration of the sulfadiazine in the spinal fluid is only 50 or 60% of that in the blood. It is, therefore, good practice to keep the blood level in a case of cerebrospinal fever about 12-15 mgs. per 100 cc. It should be mentioned that when first introduced into clinical use, sulfathiazole was not recommended for treatment of meningitis because it was found in relatively low concentration in the spinal fluid even in the presence of a blood level of 8 or 10 mgms. per 100 cc. In spite of the early predictions its use has been followed by excellent clinical responses and cures. It is possible that the actual concentration of the drug in spinal fluid is not of great importance, but in order that one may more accurately evaluate his results, both blood and spinal fluid determination should be made at least every other day during the early days of treatment.

How long should the drug be continued is always a question that confronts the physician. It is frequently difficult to answer this question and say when a patient has recovered from his disease or to know what clinical data to use as a guide in discontinuation of therapy. Within 24 hours after chemotherapy has been instituted some patients may be afebrile, have a normal pulse rate, normal blood pressure and to all appearances he has recovered. However, if his spinal fluid is examined at that time, it may be loaded with

pus cells. A safe rule to follow is to continue full doses of sulfadiazine until spinal fluid is clear, then reduce the dosage to one-half for another four or five days. If some such scheme is not followed, there will be many serious relapses or recurrences. Patients who have recurrences should be treated as a new case, although a warning should be sounded relative to the follow-up of blood counts; all patients who have been on chemotherapy for one week or longer should have at least two blood counts, five to seven days apart after discontinuing the drug. This may reveal a developing blood dyscrasia that would not otherwise be discovered at early stages.

Serotherapy: The treatment of cerebrospinal fever with serum has largely been supplanted by chemotherapy. In Circular Letter No. 17, issued February 23, 1942, by the Office of the Surgeon General of the United States Army, anti-meningococcal serum was not recommended unless deemed necessary in the individual case. While it is true that chemotherapy alone is usually adequate, there are instances in which serotherapy is recommended. It would seem appropriate, therefore, to reserve the use of anti-serum as a supplement to chemotherapy for the very severe or the apparently fulminating cases. It is particularly recommended for patients in coma, in whom bacteremia is suspected. In other cases anti-serum should be employed when there is no definite objective evidence of improvement after 24 to 48 hours of adequate chemotherapy. It is also indicated in those cases manifesting drug intolerance. The relative value of anti-toxin and anti-bacterial serum is still undecided. Hoyne advocates the use of anti-toxin although experimentally it appears to show no properties other than those due to anti-bacterial immune bodies that it contains, but serotherapy if employed alone or as a supplement to chemotherapy should be administered in adequate doses. To the average 150-pound adult with meningitis an initial dose of 150 to 300 cc. of anti-meningococcal serum should be given and repeated within 24 hours if no improvement is noted. Hoyne and others are advising against intraspinal therapy and are recommending only the intravenous route. If anti-toxin is to be

used a dose of 60,000 (180 cc.) units to 100,000 (300 cc.) should be given and repeated in 12 hours. — Hoyne has given as much as 1200 cc. within 4 days and reports excellent recoveries without complications.

In either instance the anti-toxin or serum should be diluted with 10% dextrose in saline solution of at least equal volume, but preferably double on more than the volume. It is important to have the dextrose in the saline solution to avoid the precipitation of the serum. It is also advisable to add to this mixture .05 to 1 cc. of epinephrine and administer at body temperature by the drip method. The flow should be started slowly, but after a few minutes it may be increased to 60 drops per minute.

Symptomatic Treatment: Symptomatic therapy in the treatment of meningitis is of great importance, but unfortunately frequently overlooked. It is important that the fluid balance should be kept at a good level. In febrile patients who are in a semicomatose condition, too often they are allowed to become dehydrated. They should be given at least 3,000 cc. of fluid a day and probably not more than 3,500 cc., and it should be administered intravenously or subcutaneously if the patient cannot take this amount by mouth. The food intake is not of great importance because with the present therapeutic measures most patients either recover or succumb to the disease before the nutritional state would make any great difference. It is well, therefore, to give the patient sweet fruit juices or 5% to 10% intravenous glucose, but other than this one need not worry in the majority of instances. It goes without saying that a sponge bath in cases of high fever, an ice cap to the head for relief, sedations for relief of restlessness, lumbar puncture to relieve the spinal fluid pressure in those cases who build up high pressure with an accompanying restlessness and delirium are all factors of importance. In the comatose state, one must be ever on the alert to see that the patient's bladder is emptied regularly. An incontinent patient may have a tremendously enlarged bladder extending almost up to the umbilicus and his incontinence merely representing an overflow. This is an important point in watching comatose cases.

Sedation in the meningitis patient is frequently one of the most difficult problems to answer that confronts the physician. In a delirious, maniacal patient one may give tremendous doses of the barbituric acid preparations intravenously without causing much sleep or relaxation. Morphine is not recommended as being a particularly good drug to quiet these cases. Some of our neurosurgeons feel that in the presence of brain injury morphine should not be given at all. Pentothal or sodium nembutal intravenously has been recommended by some and rectal anaesthetics of avertin have been used to bring about relaxation. The writer has had patients who have been delirious in which it was practically impossible to quiet them with any drug used. It should be said that intravenous pentothal was not tried.

Complications and Sequelae: The incidence of complications and sequelae have been greatly reduced since the advent of chemotherapy. The shift in the mode of administration of serum from the intraspinal to the intravenous route has probably reduced the incidence of central nervous system complications also. One notes that prior to chemotherapy the following complications were reported as occurring: "There may be cranial nerve involvement, particularly deafness and blindness, changes in mentality, transient paralysis, convulsions, encephalomyelitis or acute encephalitis, panophthalmitis and other types of ocular infection, arthritis, purpura, pericarditis, endocarditis, myocarditis with cardiac enlargement, pleurisy, orchitis and epididymitis, transient albuminuria and hematuria, adrenal hemorrhage and diabetic coma." To be sure, probably any of these complications may still occur, but perhaps less frequently. However, arthritis and herpes occur in an appreciable number of early and adequately treated cases. One must also be on the alert for complications resulting from chemotherapy and when serum is used for various manifestations for serum reaction. The complications resulting from drug therapy may be nausea and vomiting, cyanosis, drug rash, hematuria, hemolytic anemia, leukopenia and granulocytopenia, oliguria, flank pain or typical renal colic and other less important renal manifestations.

The incidence of these complications resulting from therapy is greatly reduced if sulfadiazine is used and if an adequate fluid intake maintained. An adult on the drug should void 2,000 cc. of urine daily as a minimum. Drug fever usually does not appear until the second week from the 9th to the 14th day, nor does leukopenia or agranulocytopenia usually occur until the second week. It is important, therefore, to give early and adequate drug therapy and stop as soon as possible, thus many of the later complications can be avoided.

Effectiveness of Newer Methods of Therapy: That our newer methods of treatment are an improvement over previous methods is quickly shown by the mortality statistics. The following figures were supplied by the Baltimore City Health Department:

Year	Cases	Percent of cases	
		Deaths	that died
1917	122	58	46
1918	175	75	42
1931	42	16	37
1932	24	9	37
1935	182	63	29
1936	285	94	33
1942	201	31	15
1943(1st 13 wks)	189	25	13

One can gather from these figures that our over-all mortality rate should not exceed 15 or 16% even in an epidemic period. During non-epidemic periods it should be less if early diagnoses are made and early, adequate therapy is instituted.

It is frequently difficult to determine whether a secondary rise in fever beginning at the end of the first week is due to the drug or to a recrudescence of the disease. Fever alone is no contraindication for continuing the drug. However, a search should be made for evidence of recurrence or complication of the infection. If none is found, it is well to discontinue the therapy if the patient's condition will warrant it; if not, change to another type of sulfonamide drug.

Complications resulting from serum are

usually in the form of arthritis or urticaria. They may be treated symptomatically.

One of the most serious complications of meningitis is the peripheral vascular collapse resulting from adrenal hemorrhage (Waterhouse-Friderichsen syndrome). It is treated as any acute adrenal insufficiency by giving sodium chloride and adrenal cortical hormone. Normal saline should be given intravenously during the period of marked collapse, either intravenously or subcutaneously. One may add one cc. 1-1000 epinephrine subcutaneously at once and add 1 cc. to each litre of fluid given thereafter. Cortical adrenal extracts in 10 cc. amounts may be given every 2-4 hours or until improvement of the peripheral vascular state is noted, after which it may be given less frequently depending on the level of the blood pressure, the character of the pulse and the patient's general physical state. If this complication is not recognized and treated early and vigorously the patient may die within a matter of a few hours. On the other hand, there have been cases of recovery reported.

Meningococcemia: A word should be said concerning a meningococcemia, a condition which may occur as a disease entity without meningitis or other manifestations of central nervous system involvement. However, meningococci have been demonstrated by cultural methods in the blood of 25% to 80% of cases of meningitis, depending upon the cultural methods and the stage of illness at the time of taking the blood. In fulminating cases one may see the patient first because of generalized aches, arthritis, photophobia and generalized purpuric rash, without any manifestations of meningeal irritation. When lumbar punctures have been done early on these patients, spinal fluid is frequently found to be normal and there may or may not be any increase in pressure. It is particularly important to diagnose such cases correctly and institute therapy immediately before meningitis develops. It should be added, however, that in some cases no meningitis ever developed even without treatment.

Isolation of the Clinical Case: The period of isolation of cases of meningitis is often governed by the recommendation of the state or local health department. 14 days is the

usual prescribed period of isolation. The presence or absence of positive throat cultures is not a criteria to be used as a guide. With chemotherapy the patient may appear well, be afebrile, have clear spinal fluid, etc. by the end of seven or eight days. In spite of this it is still the practice to isolate the patient for the full fourteen days. The practice of segregating the actual case of meningitis is undoubtedly advisable, but the isolation of carriers is probably of limited value and should not be done.

The danger of contracting meningitis through contact with a case is probably much overstressed. The incidence of multiple cases in the same household in Baltimore out of 201 cases during 1942 was less than 3%. The question always arises—should one do anything about treating contacts. Most workers feel it is not necessary. However, sulfadiazine may be given to the contacts in doses of 4 grams a day for the adults. This does rid the carriers of their organisms. This is not believed at present to be a good practice for large groups of people. It is not being practiced in the Army where studies have shown 50% or more of the soldiers to be carriers.

Conclusion: This paper was written for the purpose of briefly reviewing the subject of meningococcal meningitis and to present some of the more generally held concepts relative to therapy. There are several argu-

mentative points dealing with diagnosis and treatment which were only touched upon. It is felt, however, that the views presented are the ones generally subscribed to.

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READ IT!

Advises Physicians to Inform Selves About New Social Security Bill

Physicians should inform themselves concerning the origin and objectives of the proposed Wagner-Murray-Dingell bill broadening the American social security program, *The Journal of the American Medical Association* for June 26 advises in an editorial discussing the measure. *The Journal* says:

"In its evolution the . . . bill stems from the National Health Conference of 1937, the Wagner bill which followed that conference, and the report of the National Resources Planning Board. Essentially in its medical aspects it is a compulsory sickness insurance bill and an attempt to translate the proposals of the Social Security Board into a technic of action. Inquiry of reliable sources in Washington indicates the probability that the actual designers and authors of the bill included I. S. Falk, director of the Bureau of Research and Statistics of the Social Security Board of the Federal Security Administration, Mr. Wilbur J. Cohen, technical adviser to the Social Security Board, and Senator Wagner's secretary, Mr. Philip Levy. . . . Inquiry also reveals that as far as can be determined,

representatives of the medical profession, either within or without the government, were not consulted in the development of the medical provisions. Evidence of this failure to consult the medical profession appears in the language of the proposed bill, since it speaks twice of a 'spell of sickness.' The word 'spell,' thus employed, does not appear in English dictionaries except as a colloquialism in Webster, and the term is seldom, if ever, used by any one educated in medicine. . . .

"Speaking bluntly. . . . the measure apparently attempts to avoid the numerous difficulties involved in developing a government controlled medical service by making the Surgeon General of the Public Health Service, whoever he might be, a virtual 'gauleiter' of American medicine. Indeed, it is doubtful if even Nazidom confers on its 'gauleiter' Conti the powers which this measure would confer on the Surgeon General of the U. S. Public Health Service. . . .

"In offering the bill its proponents emphasize that it provides for free choice of doctors; free choice of a doctor means of course, free choice of doctors willing to engage in this type of work. . . ."

Editorial

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MEDICAL STUDENTS ON ARMY PAY

The powers of the Federal Government have been the subject of controversy ever since the Constitution was ratified by the Original States. Hamilton led those who favored a strong central government, and Jefferson those who believed in local self-government with the Federal Government doing only what was beyond the powers of the States—foreign relations, postal system, etc. The balance of power between the Federal Government and the States has never been settled. It has been the cause of duels and of civil war. Through the years the central government has grown constantly stronger and that of the States proportionately weaker. Most of this gain has been brought about by constitutional amendments and legislative enactments. Each war accelerated the process. Rarely does the Federal Government relinquish any authority it has once gained, con-

trol over the railroads in World War No. 1 being a notable exception.

Even before World War No. 2, the government in Washington began to use a new technique in extending its authority. It began to use its tremendous monetary power. By offering grants or bonuses if the States would undertake certain measures in accordance with specifications drawn up in Washington, the Federal Government gained control of various functions of the States; notably roadbuilding, certain public health activities, and relief measures. Whether these measures are wise or not is beside the point. The fundamental principle involved is the important thing. If the trend towards centralization continues at the same rate, what will become of State Governments? Will they become merely historical vestiges like the urachus or the obliterated hypogastric arteries?

The Federal Government has recently extended its influence to the field of education. In this move they are using a two-edged sword—monetary power and the control of patronage. Except for girls and a few rejectees, it has absolute power over the youth of the land. Uncle Sam says to the able-bodied youth of the nation who shall go to school and what they shall study. The liberal arts colleges are hard put to justify their existence. In this total war such control is no doubt necessary. We hope that the love of learning will not be entirely suppressed. The U. S. S. R. seems to be able to take an interest in cultural affairs and at the same time do a pretty good job at waging war. It recently celebrated Sir Isaac Newton's 300th anniversary in seven different cities.

As to the future of medical education, Wingate Johnson in an editorial, "Quid Pro Quo," in the March issue of the *North Carolina Medical Journal*, paints a very gloomy picture. He points out that the recent provision for paying the medical student's tuition and maintenance, and allowing him fifty dollars a month pocket change is entirely unnecessary. There is not a medical school in

the country that has not for years turned away more applicants than they could take. There is nothing to indicate that this condition would not have continued if the prospective medical student had been given a deferred rating by the draft boards. There was no reason for paying him. There must have been an ulterior motive, and this, Wingate Johnson more than hints, is the control of medical education.—Editorial, *Va. Med. Mo.*, June, 1943.

WORKMEN'S COMPENSATION LAW

AN ACT TO AMEND CHAPTER 175 OF THE REVISED CODE OF DELAWARE, 1935, ENTITLED "DELAWARE WORKMEN'S COMPENSATION LAW," BY PERMITTING EMPLOYEES TO DESIGNATE THEIR OWN PHYSICIANS OR SURGEONS.

Be It Enacted by the Senate and House of Representatives of the State of Delaware in General Assembly met:

Section 1. That 6078, Section 8 of Chapter 175 of the Revised Code of Delaware 1935, as amended by Section 6 of Chapter 269 of Volume 43, Laws of Delaware (1941) be amended by adding thereto a new sub-section to be known as Sub-Section (f) as follows:

(f) Any employee may apply in writing to the Industrial Accident Board for permission to employ a physician or surgeon other than the physician or surgeon furnished by his or her employer. Such application shall state the name and address of the physician or surgeon whose services are desired by the employee. Upon the approval by the Industrial Accident Board of any such application, the employee by whom or on whose behalf the application was filed shall be entitled to receive from his or her employer the reasonable cost of the services of any physician or surgeon whose employment was approved, performed subsequent to such approval, within the limitations provided for in sub-section (b) of this section.

Approved April 16, 1943.

How Color Blind Men Are Admitted to Navy and Army Air Forces

Discussing a technic which is claimed will educate men who are color blind so that they can pass the armed forces' tests for color blindness, *The Journal of the American Medical Association* for June 5 says that "Obviously, it is for the services themselves to determine whether or not the tests for color blindness now used are sufficient, in view of the possibilities of learning, to screen out enough persons who are color deficient or whether or not the young man who is willing to put in the necessary time in an educational process to learn enough about the tests to enable him to pass them would not qualify because of superior learning ability or intelligence to meet the needs of the armed forces.

"In *The Journal* for March 20 reference was made to an alleged cure for color blindness said to have been devised by one J. H. Lepper, optometrist, of Mason City, Iowa. Subsequent to the publication of that statement, Lepper sent to *The Journal* a communication in which he insisted that he does control color blindness in from fifteen to twenty days so that boys who followed his methods passed government tests. He submitted complete instructions as to the technic that he uses, some special lenses which are used as a part of the procedure, and a list of men now in the Navy and in the Air Force who had previously been rejected but were accepted after having followed his technic.

"The material concerned was referred to appropriate agencies in Washington, which verified the information supplied by Lepper as to the men who had been rejected and later accepted following his attention. Investigators then visited certain optometrists in the eastern part of the United States who follow the Lepper technic and studied their results. These investigators believe that Lepper is conducting an educational rather than a therapeutic process. In his technic the subjects are instructed to get some one with normal color vision to assist them and to trace the shapes of the figures carefully even in those charts in which they can see the figures fairly well. They are instructed to continue working on harder and harder charts and to

keep daily records of the charts which they can read and those which they cannot read. Thus the person concerned builds a learning curve and with sufficient time masters the color manual thoroughly.

"It seems quite likely that those with disturbances of color vision do fix in their minds appearances which are associated with certain colors when viewing objects that have for them some familiarity. No doubt re-examination of these individuals at a later date, using a different technique, would reveal that the persons concerned are still color deficient, although they did learn enough about the test ordinarily used to pass that test and thus enable them to enter military service. . .

"The optometrists who are now specializing in the Lepper technique might limit their promotion of the method to the statement that they teach men to pass the tests for color vision and avoid carefully the use of the word 'cure' in any relation to color blindness."

Tetanus Immunization of Military Personnel

All military personnel on induction are being immunized against tetanus either, as in the Army, by three injections of fluid toxoid, or as in the Navy and Marine Corps, by two injections of alum precipitated toxoid (*New Eng. J. Med.*, 227: 162, 1942). In addition a small or stimulating dose is injected prior to departure for a theater of operations and an emergency dose is given to those wounded or burned in battle or incurring other wounds likely to be contaminated with clostridium tetani. According to recent report (*Am. J. Pub. Health*, 33: 53, 1943) since June, 1941, when the present tetanus immunization program was adopted, there have been but four cases reported from the entire Army, and none of these were in immunized individuals. Although perhaps too early in the present war to draw any conclusions, it is of particular interest that no cases of tetanus have been reported from battle casualties.

For civilian use, especially in children, it is of decided advantage to accomplish simul-

taneous immunization against tetanus and diphtheria. Combined Diphtheria Toxoid-Tetanus Toxoid, Alum Precipitated, Lilly, is designed for prophylaxis only, affords effective immunity against both diseases, and avoids risk of serum sensitization which may follow use of an antitoxin.

New Vitamin—Bc

Isolation and crystallization of a new anti-anemic vitamin—Bc—half a million times more potent than fresh liver, which may speed convalescence from many illnesses because of its blood regenerating effects, was announced recently by scientists of Parke, Davis & Company. The announcement, contained in the April 30 issue of *Science*, describes the new vitamin Bc as definitely a member of the Vitamin B complex.

The subletter "c" has been added to the name to represent the thousands of chicks on which experimental studies have been made.

Six Parke-Davis research men signed the paper announcing the isolation and crystallization of the new vitamin, fourteenth in the aristocratic vitamin family. They are Drs. Pfiffner, Binkley, Bloom, Brown, Bird, and Emmett.

Dr. J. J. Pfiffner has already attained prominence for his outstanding work on the suprarenal cortex. He prepared the first potent extracts for treatment of Addison's disease. Dr. A. D. Emmett is head of the company's division of vitamin and nutritional research and is a well-known vitamin authority. Dr. S. B. Binkley has hitherto been primarily associated with the isolation and synthesis of Vitamin K.

The existence of the anti-anemic Bc vitamin was first announced by Professor A. D. Hogan and his associates at the University of Missouri. They observed that chicks placed on a supposedly sufficient diet failed to grow and developed severe anemia, and that this could be cured by adding crude liver extract. Dr. Hogan and an associate, Dr. B. L. O'Dell, were able to make a 300-fold concentration of this anti-anemic factor from liver. Their work became the basis for extensive research which finally led to the isolation of this anti-anemic vitamin in pure form.

Parke-Davis research laboratories, headed by Dr. Oliver Kamm, scientific director, undertook the isolation of Vitamin Be in the autumn of 1940. Their new, crystalline product represents a 500,000-fold concentration of the antianemic activity present in liver. Although the chemical formula of this newly-isolated vitamin is not known, obviously the next step on the Parke-Davis research program is its chemical identification. Studies are still being carried on, aimed at a larger production of Vitamin Be so that eventually its value in treatment of various forms of secondary anemia can be determined.

Isolation of a vitamin is important because it offers hope of chemical identification and later the synthesis of the compound. It makes possible further advances in nutritional research since it can be incorporated into synthetic diets and thus serve as a tool for detecting the existence of additional vitamins.

For Milk-Allergic Patients

Appetizing and nutritious recipes for using Mull-Soy in milk-free diets are now available in a new publication of Borden's. Already widely prescribed as a hypoallergenic substitute for milk in infant formulas, Mull-Soy is now proving equally useful in diets of older infants, children and adults who are allergic to milk.

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These Mull-Soy recipe folders are designed for distribution by physicians to their patients. Any desired number of copies may be obtained by writing to Borden's Prescription Products Division, Department CB, 350 Madison Avenue, New York 17, N. Y.

BOOK REVIEWS

A Manual of Clinical Therapeutics. By Windsor C. Cutting, M. D., Associate Professor of Therapeutics, Stanford University. Pp. 609. Cloth. Price, \$4.00. Philadelphia: W. B. Saunders Company, 1943.

This Manual is almost entirely devoted to treatment, only a few lines being devoted to etiology or diagnosis. The discussions are short, as befits a Manual, but are ample. The therapeutics described is up-to-date and sufficiently detailed to be of ready use. The work includes tropical diseases as well as those current in this country.

The various appendices, covering over 150 pages, include such items as special procedures, physiotherapy, poisoning, diet lists, weights and measures, abbreviations, physiological data, dosages, etc.

The volume "is intended to be a comfort and practical guide for students, house officers, and practitioners of general medicine." It is such a guide, and a very superior one at that.

A Guide to Practical Nutrition. Edited by Michael G. Wohl, M. D., and John H. Willard, M. D. Pp. 98. Paper. Philadelphia: Philadelphia County Medical Society, 1943.

The editors, acting for their Society's Committee on Nutrition and Deficiency Diseases, have collected thirteen papers originally published in *Philadelphia Medicine* covering the major aspects of nutrition. These papers are entirely short, but are compact. In addition, in an appendix are charts of vitamins and food compositions. This little brochure is a valuable one to keep on the office desk, where it will answer immediately most of the questions your nutrition case presents.

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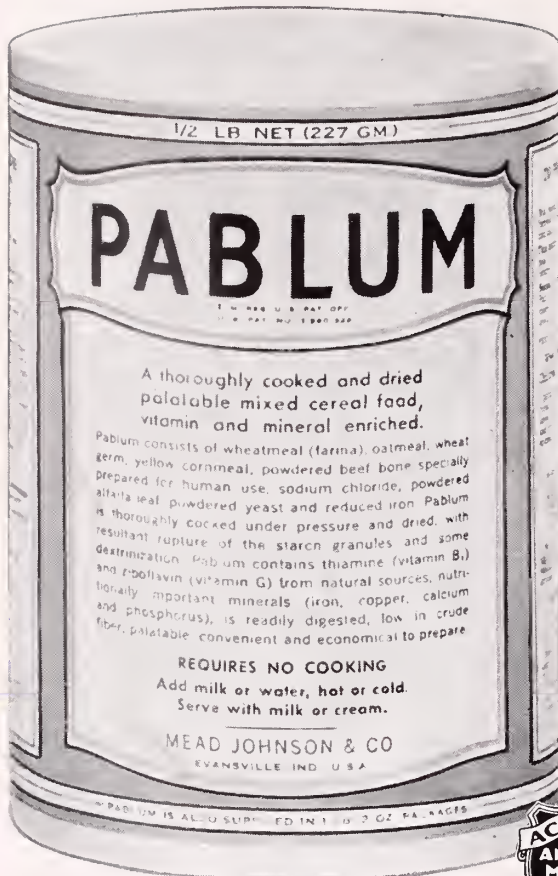
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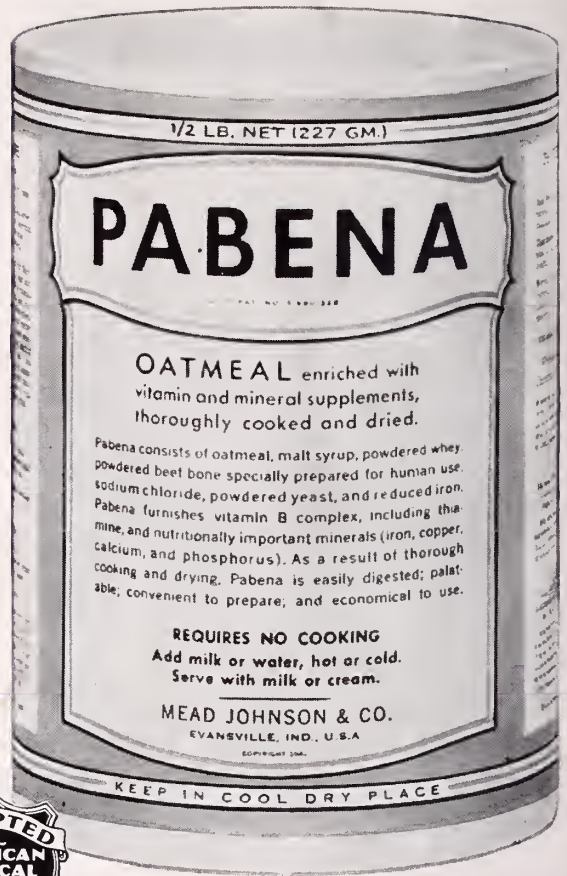
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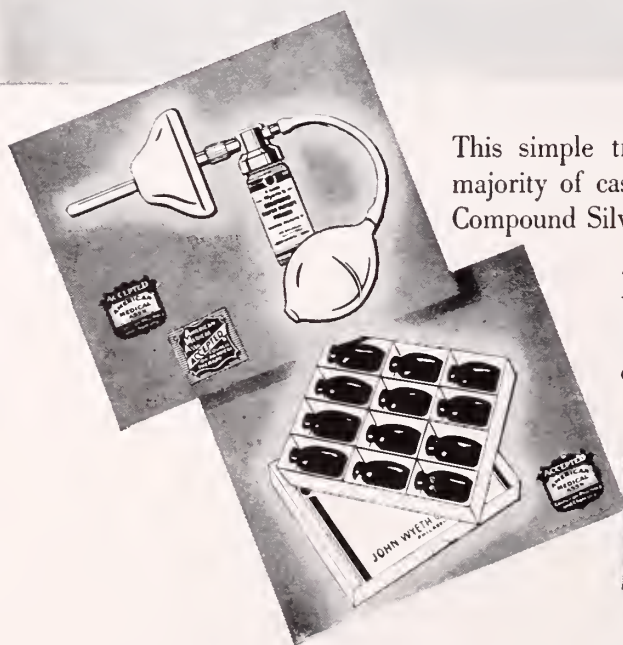
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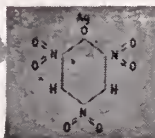
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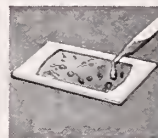
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*Hirsch, M. M., and Novak, M. V.: Evaluation of Germicides with Relation to Tissue Toxicity. Proc. Soc. Exper. Biol. and Med., June, 1942.

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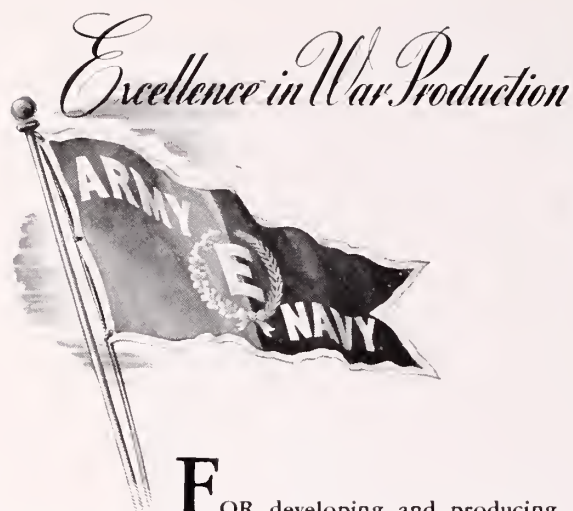


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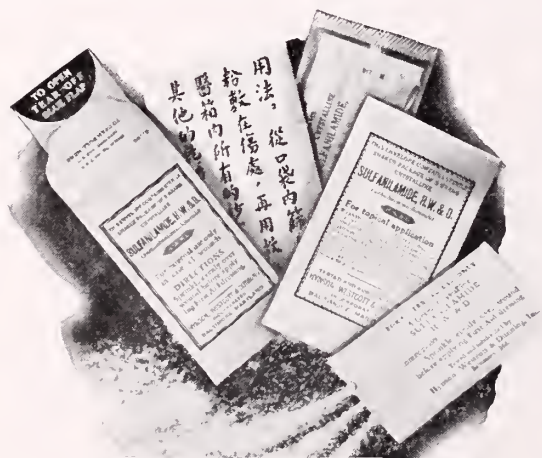
**Laryngoscope*, Feb. 1935, Vol. XLV, No. 2, 149-154. *Laryngoscope*, Jan. 1937, Vol. XLVII, No. 1, 58-60. *Proc. Soc. Exp. Biol. and Med.*, 1934, 32, 241. *N. Y. State Journ. Med.*, Vol. 35, 6-1-35, No. 11, 590-592



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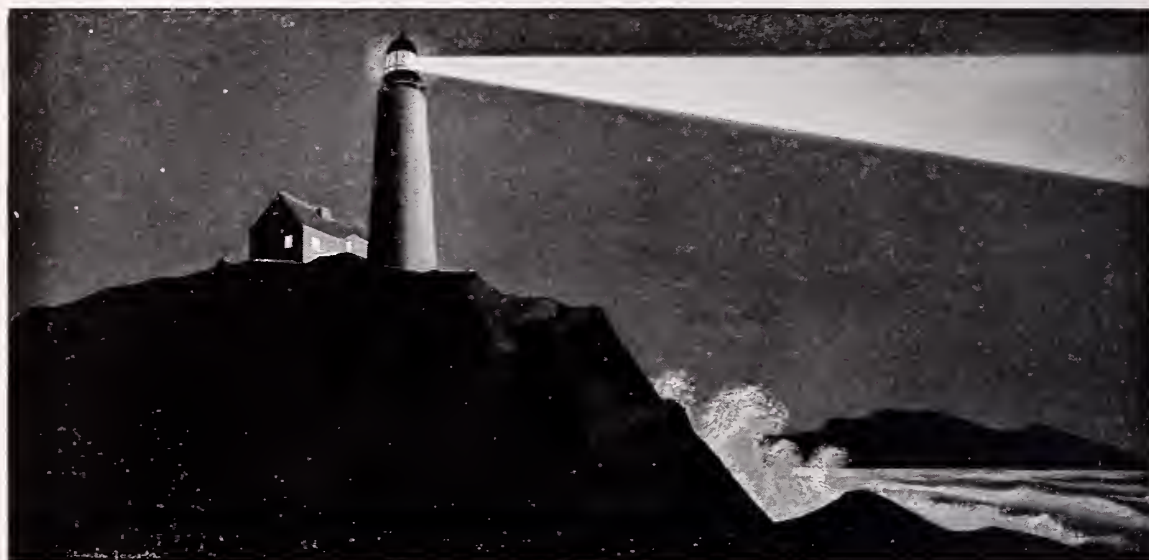
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THE NEW DELAWARE PLAN FOR MEDICAL CARE

HAROLD V. MAYBEE,*

Wilmington, Del.

Although it is less than three months since actual operation of the new Delaware Plan for Medical Care was undertaken, its prompt acceptance by the general public and physicians alike is most encouraging. Because the Plan seems now firmly established and because its inception was undertaken quietly and with little public fanfare, this seems an appropriate time to give a brief resume of circumstances surrounding its adoption and the details of the Plan itself.

For more than two years preceding any definite action the Medical Economics Committee for the New Castle County Medical Society has paid close attention to the various plans adopted throughout the country covering medical and surgical service. Efforts have been made to secure all available literature and data both concerning the details of the plans themselves and later the results of their operation. Thus, when the time seemed ripe for consideration of a plan for the state of Delaware this committee was well fortified with facts concerning the nation-wide experiences to date. These facts were made available to the Committee on Medical Economics of the State Society, with the result that the report of the chairman of that committee was unanimously adopted at the meeting of the State Society at Dover, on October 13, 1942.

This report announced plans to inaugurate a voluntary, limited health insurance program, and emphasized the necessity for starting upon such a program promptly. Upon its adoption, the New Castle County Medical Society almost immediately went on record as approving in principle the prepayment of medical contracts, and established a special subcommittee of their Medical Economics Committee for the purpose of drafting details.

This committee, appointed by the president of the New Castle County Medical Society, arrived at three basic conclusions after numerous meetings; first, that the Plan should cover only surgery at the outset; secondly, if possible, the local non-profit hospital plan, Group Hospital Service, Inc., should be asked to operate the Plan through its own organization and administration by its own Board of Trustees; and, third, that the plan should provide for indemnification only and should be available to all without regard to income. Under the sponsorship of the County Society, therefore, the Board of Trustees of Group Hospital Service, Inc., was approached and this organization agreed to undertake the operation of the Plan in conjunction with the Hospital Plan. The Medical Plan adopted by the New Castle County Medical Society is thus somewhat unique in that no separate corporation was established and no Board of Trustees set up to administer the affairs of the Medical Plan separately from that of the Hospital Plan and staff. Instead, the staff of the Hospital Plan has entire jurisdiction over all activities and policies of both the medical and hospital plans.

There were several excellent reasons for placing the entire operation of the Medical Plan in the hands of the Hospital Service Corporation. For eight years that Corporation has served the community and has been one of the plans consistently receiving the approval of the American Medical Association both as to its method of operation and the basic character of its contracts and organization. The Board of Trustees consists of competent, trustworthy men representing the general public, the physicians, and the hospitals, and has the complete confidence of the community at large as well as of the physicians. It was agreed, particularly in view of existing conditions, that to attempt to set up a separate corporation duplicating the efforts and procedures of the Hospital Service

* Managing Director, Group Hospital Service, Inc.

Corporation would be needlessly expensive, cumbersome, and unproductive of any practical advantages in this case.

The participating physician contract at present limits membership to physicians resident in the state of Delaware or licensed to practice medicine therein, but will probably be broadened to include participating physicians on the staffs of hospitals now members of the Plan, even though not within the Delaware border. A physician, upon becoming a participating physician, agrees to credit the Plan patient with the full amount scheduled as indemnity for each procedure in the published schedule of indemnification. He furthermore agrees that, in the event the Corporation is unable to reimburse in full for this amount that he will accept on a pro rata basis such amount as the Corporation may consider itself able to pay and, at the same time, accumulate a satisfactory reserve for contingencies. The participating physician agrees that his charges to the patient shall consist only of the amount representing the difference between the amount given in the fee schedule for each procedure and his regular charges for such procedure. The text of the "Description of the Plan for Medical Care," which is part of the physician's contract, follows:

DESCRIPTION OF THE PLAN

Group Hospital Service, which now provides hospitalization under subscriber contracts, will add under a separate contract provision for specified medical care for subscribers desiring that coverage. It not being possible because of insufficient data to determine accurately at this time the proper charge for medical coverage, the income and disbursements for medical coverage contracts will be maintained in accounts separate from the accounts for hospitalization, and disbursements for medical care will be made only to the extent that income received for that coverage permits.

(1) Participating Physicians

Any physician, resident in the State of Delaware and licensed to practice medicine in the State of Delaware, will be eligible to enter into a contract with Group Hospital Service to participate in the Medical Plan.

(2) Non-Participating Physicians

Any Delaware physician licensed to practice medicine not entering into a contract as a participating physician, and any physician, licensed to practice medicine in a state other than Delaware, will be considered as a non-participating physician. Non-participating physicians need not have contracts with Group Hospital Service.

(3) Services Rendered By Physicians to Subscribers

The service relations between physicians,

whether participating or non-participating, and patients are not affected by this Plan. Group Hospital Service enters the picture only to pay to the physician on behalf of the subscriber the amounts stated in the subscriber contract and as provided in the attached schedule, 100% of such schedule being paid if the physician is a participating physician, subject to such deductions as are covered in Paragraph (6), 50% of the amounts in the schedule not subject to deduction will be paid, if the physician is non-participating. The physician is to charge the patient the same fee which he would have charged if the patient had not been a member of the Group Hospital Medical Plan. The difference between the total fee charged by the physician and the amount payable under the Schedule of Indemnification is to be collected by the physician directly from the patient.

(4) Subscriber Contract

A copy of the contract which Group Hospital Service will enter into with subscribers desiring coverage under the Medical Plan is attached hereto and forms a part of this description.

(5) Income and Disbursements—Medical Plan

All income derived from subscriptions to the Medical Plan will be credited to a special account within Group Hospital Service. The total administrative and promotional expense of Group Hospital Service will be divided between the Hospitalization account and the Medical Plan account in proportion to the earned income of each. From the income of the Medical Plan there will be deducted this cost of operation and the remainder will be available for the payments to participating physicians, non-participating physicians, and creation of a reserve.

(6) Reserve For Medical Plan

Inasmuch as the Medical Plan is to stand on its own feet and, inasmuch as insufficient data are available to determine accurately the cost of providing medical care under this Plan, it is necessary that the Medical Plan build up a satisfactory reserve. The Board of Trustees of the Group Hospital Service, Incorporated, will from time to time establish that percentage of the Schedule of Indemnification, which will in the judgment of such Board of Trustees enable the Medical Plan to establish and maintain a satisfactory reserve, and this percentage of schedule will then become the basis for payment to all participating physicians. On or before February 1 of each year the Board of Trustees will consider the reserve which had been accumulated at the end of the preceding calendar year, and if in its judgment, additional payments to the participating physicians for that year are justified, such payments will be authorized up to but not exceeding the amount to which the participating physician would be entitled under the Schedule of Indemnification. The payment of the specified percentage of the Schedule (with any additional payment, if so authorized) shall be accepted by the Participating Physician as discharging in full the obligation of Group Hospital Service to such physician for such calendar year. Participating physicians will credit subscribers with the full amounts specified in the Schedule of Indemnification even though payments by Group Hospital Service, Incorporated, have been for less than the scheduled amounts.

In the event that the Board of Trustees of Group Hospital Service, Incorporated, shall decide to terminate the Medical Plan at any time, the funds available in the Medical Plan reserve

will be used to the extent that they are available to discharge pro rata, obligations to all physicians who have been paid less than the full amounts which had been provided in the Schedule of Indemnification during the calendar year in which the Medical Plan is terminated, but for that year only.

No subscriber or member shall in any way be penalized because of the failure of Group Hospital Service, Incorporated, to compensate any participating physician.

(7) Reports of Discharges

Reports of discharges including a statement of services rendered to member participants are to be made by all physicians on forms furnished by the Corporation within 30 days from the date of discharge. Cases not so reported need not be compensated for by the Corporation except at its option but the member of the Plan shall in no way be penalized because of such failure of the Corporation to compensate the physician. Any late reported cases, which are accepted by the Corporation, shall be discounted at the rate of 2% simple discount per month to help defray the extra administrative cost.

(8) Arbitration Board

Any matter under dispute under the Medical Plan will be referred to an Arbitration Board of four members, two members to be appointed by the Board of Trustees of Group Hospital Service, and two members by the New Castle County Medical Society. In the event a decision cannot be reached by a majority of this Board, a fifth and temporary member will be selected by majority of said Board. If the Board is unable to agree upon a selection, then said temporary member shall be appointed by the Chancellor of the State of Delaware. The decision of the Board of five so constituted, will be final.

CONTRACT WITH PARTICIPATING PHYSICIAN

The undersigned physician, licensed to practice medicine in the State of Delaware, agrees to furnish to members of the Medical Plan of Group Hospital Service, Inc., the services, and to accept payment therefor, as outlined in the Subscriber Certificate and the description of the Plan for Medical Care, attached hereto and made a part hereof. Any fees in addition to the full scheduled amounts so payable are to be the liability of the member of the Medical Plan.

I agree to abide by any decision rendered by the Arbitration Board as provided in Paragraph (8) of the description of the Plan for Medical Care.

I further agree that Group Hospital Service, Inc., shall have the right to terminate, upon ten (10) days' notice, this contract for any failure to observe any of the rules or regulations set forth in the description of the Plan for Medical Care.

This agreement shall continue in effect until terminated either by myself or by Group Hospital Service, Inc., by twelve (12) months' notice in writing, unless terminated sooner in accordance with the preceding paragraph. This contract shall also terminate immediately if for any reason I am no longer a physician licensed to practice medicine in the State of Delaware.

In its contract with the subscriber the Plan at present includes all operations involving a cutting procedure, treatment of fractures or dislocations, dental surgery, maternity care after one year waiting period, and indemnities for anaesthesia and x-ray. Services not included are those provided under the Workmen's Compensation Act or Federal laws, services during the first year for menopausal condition, hernia, hemorrhoids and tonsil operations, or for any accidents or results of pregnancy, treatment of civilian casualties by enemy action, or by armed forces of the United States or its Allies in time of war, plastic surgery, and medical treatment not specified in the schedule for indemnification. No obstetrical service is available under a membership held by an individual.

The amount of indemnification offered by the Corporation in the event a non-participating physician is selected is fifty per cent of the amount set for in the schedule of fees. This is on the assumption that such non-participating physician has accepted no part of the hazard involved in contributing to the Plan's success, and thus should be entitled to less reimbursement for services rendered to the subscriber.

Considerable attention was given to the preparation of the Schedule of Indemnification and every effort was made to produce a schedule which would provide fees equivalent to those customarily charged by the average surgeon to a patient in the middle and lower income brackets. To date, and with of course few claims upon which to venture an opinion, it seems that the committee has been successful in this attempt.

Following the pattern established by some of the more recently inaugurated hospital and surgical plans the Corporation adopted a two-rate schedule of payment. Individuals may join only in the event they also have membership in the Hospitalization Plan. An additional sixty cents per month is charged for the surgical coverage. For a family \$1.65 is added to the present Hospital Service Plan payment (also \$1.65). Membership in the Plan is open to husband, wife and children under eighteen. Children between the ages of eighteen and twenty-five may be enrolled as collateral members at the rate of \$.60 per

.....
Participating Physician.

month so long as they remain unemployed and unmarried. There is no age limit for membership in the Surgical Plan.

In order to offset the undue hazard of obstetrics the single contract under the Plan does not provide for obstetrical care.

The various contracts for the Plan, together with the fee schedule, received the final approval of the Board of Trustees of Group Hospital Service at its March meeting, 1943, and preparations were immediately made for introduction of the Plan to the public. Initial enrollment was conducted among those larger groups already having members in the Hospital Service Plan, and from the outset the Plan met with success. At the present time approximately 6,500 people are already covered by the Medical Care (Surgical) Plan, and enrollment is progressing rapidly. Widespread demand among the groups already organized under the Hospital Service Plan is an encouraging index to future operations.

Naturally it is much too early to attempt any prediction concerning the success or failure of the Plan. However, as expressed by the Committee on Medical Economics, it is hoped the plan, installing a voluntary medically controlled and sponsored arrangement for prepayment for various professional charges, will prove to be one more step in the direction of forestalling a national compulsory health insurance program, with all the demonstrated evils inherent therein.

SWEAT LOSS

In seasons and regions of great heat and high humidity, profuse perspiration is a prostrating, although expected, phenomenon. Fluids of various kinds are thirstily imbibed to replace loss through excessive perspiration, without thought of whether the ingested liquids really replaced the lost fluids. Greater relief could doubtless be attained if the physiology and chemistry of sweating were better analyzed and realized.

Sweat is a saline acid solution which may be shed at the rate of a liter an hour under

trying circumstances.¹ It contains basic salts, especially sodium and potassium chloride, of which several grams may be lost on a hot, humid day. The acidity of sweat is largely determined by its content of lactic acid, which may be present in large amounts.² Nitrogenous substances are also excreted by sweat, and such excretion has been known to reach a total of several grams of nitrogen per day.^{1,2} Excessive sweating may result in the elimination of more alkaline chlorides by the skin than by the kidneys and tends to result in dehydration through such loss of salt and water. Thus a physiologic process can lead to collapse or to severe muscle cramps, which can, however, be relieved or averted by drinking not water but saline solution.

Recently another important metabolic loss has been reported in cases of profuse perspiration. Water-soluble vitamins are excreted by sweat and excessive perspiration may cause an undue loss of such vitamins. It has already been demonstrated that ascorbic acid, thiamin, riboflavin, niacin, and pantothenic acid may all be eliminated in perspiration.³ As much as 10 per cent of some of these vitamins may be lost through this avenue of excretion. This is not a negligible amount if the diet is not optimal or if there is a protracted period of heat, as in tropical regions.

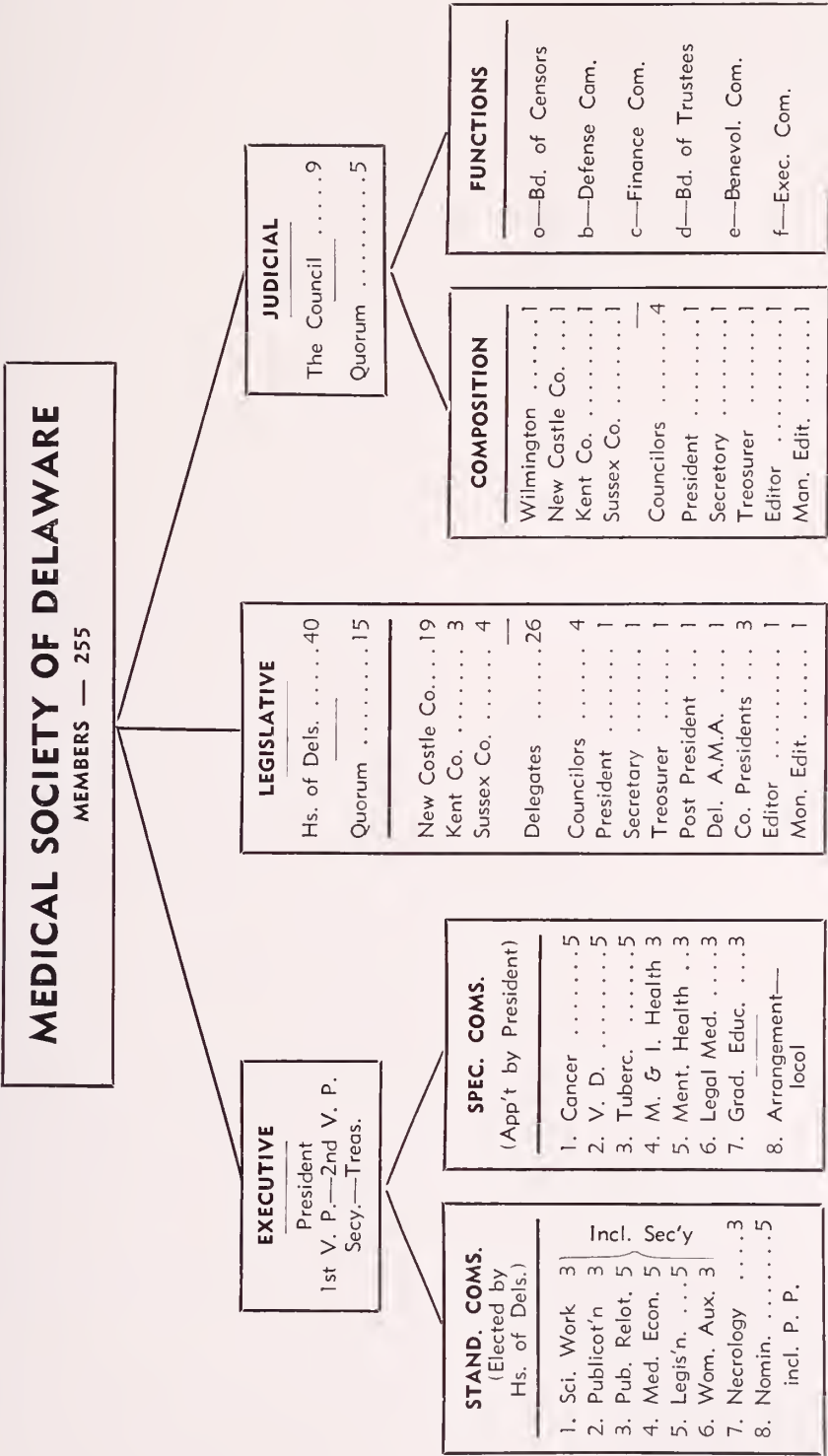
It must be obvious that in the intense heat of summer or in the tropics it is not enough to drink extra water to replace the loss incurred through sweating. Mineral loss, particularly sodium and potassium chloride, must be replaced. It now also seems that the vitamin intake should be increased in certain instances to allow for losses sustained when sweating is excessive.

N. Y. St. J. M., July 15, 1943.

¹ Best, C. H., and Taylor, N. B.: *Physiological Basis of the Practice of Medicine*, Second Edition, Baltimore, Williams & Wilkins Co., 1939, p. 1006.

² Peters, J. P. and Van Slyke, D. D.: *Quantitative Clinical Chemistry*, Baltimore, Williams & Wilkins Co., 1939, Vol. 1, pp. 271, 478, 772.

³ Cornblett, T., Kirch, E. R., and Bergeim, O.: *J. A. M. A.* 112: 426 (June 12) 1943.



GRAPH OF THE ORGANIZATION OF THE MEDICAL SOCIETY OF DELAWARE (As Proposed)

MEDICAL SOCIETY OF DELAWARE PROPOSED NEW BY-LAWS

ARTICLE I

Purposes of the Society

Section 1. Purposes. The purposes of this Society are to federate and organize the medical profession of the state of Delaware; to unite with similar societies of other states to form the American Medical Association; to advance medical science; elevate professional standards, safeguard the material interests of and promote friendly relations among members of the medical profession; to educate the public in the prevention of disease and preservation of health; and, in general, to render this profession most capable of serving humanity.

ARTICLE II

Component Societies

Section 1. Components. Component societies shall consist of those county medical societies whose Constitutions and By-Laws have been approved by this Society and which hold charters from this Society.

Section 2. Charters. Charters shall be issued only upon approval of the Council, and shall be signed by the President and Secretary of this Society. The Council shall have authority to revoke the charter of any component society whose actions are in conflict with the letter or spirit of this Charter and By-Laws. Only one component society shall be chartered in any county.

Section 3. By-Laws. Each component society shall notify the Secretary of this Society of any new or amended By-Laws or rules.

Section 4. General. Each component society shall have general direction of the affairs of the profession in its county, and shall be the sole judge of the qualifications of its members, bearing in mind that it is the only door to this Society and thereby to the American Medical Association for physicians within its jurisdiction.

Section 5. Delegates. At some meeting in advance of the Annual Session of this Society each county society shall elect from their members, who have been in that Society at least two years preceding, delegates and alternate delegates to represent it in the House of Delegates of this Society, in the proportion of one delegate to each ten members or major fraction thereof, and the secretary of the county society shall send a list of such delegates and alternates to the Secretary of this Society, on or before April 1st of each year. The term of said elected delegates and alternates shall be two years.

Section 6. Councilors. At some meeting in advance of the Annual Session of this Society, each county society shall elect a Councilor or Councilors, as provided for in Article VIII, Section 1.

Section 7. Roster. The secretary of each component society shall keep a roster of its members, and of the non-affiliated registered physicians of the county, in which shall be shown the full name, address, college and date of graduation, date of license to practice in this state, and such other information as may be deemed necessary. In keeping such roster the

secretary shall note any changes in the personnel of the profession by death, or by removal to or from the county, and in making his annual report to the House of Delegates, he shall account for every physician who has lived in the county during the year.

Section 8. Reports. The treasurer of each component society shall forward its annual assessment to the Treasurer of this Society, and the secretary of each component society shall forward its roster of members and a list of its officers, delegates and alternates to the Secretary of this Society on or before April first of each year.

Section 9. Suspension. Any county society which fails to pay its assessment, and make the report required, on or before April 1st of each year, shall be held as suspended, and none of its members or delegates shall be permitted to participate in any of the proceedings of the Society, or of the House of Delegates, or of the Council until such requirements shall have been met.

ARTICLE III

Sessions and Meetings

Section 1. Time and Place. This Society shall convene in Annual Session on the second Tuesday of October at such place as has been fixed by the House of Delegates, the rotation of counties being New Castle, New Castle, Kent, New Castle, New Castle, Sussex. The Annual Session shall continue for two days, or longer if required by the business or the program of the Society. During the Annual Session there shall be held daily General Meetings which shall be open to all registered members and guests. Whenever feasible there shall also be a Public Meeting of a medical educational character to which the general public shall be invited.

Section 2. Changes. The House of Delegates may, by a two-thirds vote of all its members, which may be taken by mail by the Secretary, change the time or place of the next Annual Session.

Section 3. Sections. The House of Delegates may provide for a division of the scientific work of the Society into appropriate Sections. Such Sections shall elect their own chairman and secretary on the second day of the Annual Session.

Section 4. Special Meetings. Special meetings of this Society or of the House of Delegates shall be called by the President on his own initiative, or on written petition of the Council, or of ten members of the House of Delegates, or of twenty-five members of the Society.

Special Meetings of the Council shall be called by the President on his own initiative, or on the written petition of three members of the Council, or of twenty-five members of the Society.

Section 5. Members. Each member in attendance at the Annual Session shall enter his name on the registration book, indicating the component society of which he is a member. When his right to membership has been verified, by reference to the roster of his society, he shall receive a badge, which shall be evidence of his right to all the privileges of membership at that session. No member shall take part in any of the proceedings of an Annual

Session until he has complied with the provisions of this Section.

Section 6. Guests. Any visiting physician not a resident of this State but who is a member in good standing of his own state Society, or any distinguished scientist not a physician, may become a guest during any Annual Session on invitation of the officers of this Society, and may be accorded the privilege of participating in the scientific work of that Session. Guests shall sign the roster as such.

Section 7. General Meetings. All registered members and guests may attend and participate in the proceedings and discussions of the General Meetings. The General Meetings shall be presided over by the President or by one of the Vice-Presidents, and before them shall be delivered the address of the President, and such scientific papers and discussions as may be arranged for in the official program.

Section 8. Investigations. The General Meeting may recommend to the House of Delegates the appointment of committees or commissions for investigations of special interest and importance to the profession or public.

ARTICLE IV Rules and Ethics

Section 1. Papers. No address or paper before this Society, except those of the President and invited guests, shall occupy more than twenty minutes in its delivery. In the discussion, no member shall speak longer than five minutes, nor more than once on any subject except by unanimous consent, provided that each essayist shall have five minutes in which to close the discussion on his paper.

Section 2. Papers. All papers read before this Society shall be typewritten, double spaced, with wide margins. Carbon copies will not be accepted. The top half of the first page should contain only the author's name, address, teaching position (if any), and hospital appointment.

Section 3. Property. All addresses, papers and reports presented before this Society shall become the property of this Society, and shall be deposited with the Secretary immediately after reading. They shall not be published or offered for publication elsewhere than in the Journal of this Society, unless consent thereto has been given by the Committee on Publication.

Section 3. Barred. A member who volunteers a paper for the Annual Session shall submit the title and an abstract of the paper to the Secretary on or before the date set therefor by the Committee on Scientific Work. A member whose title and abstract have been placed on the program and who is not present in person or by proxy to read the paper shall be barred from the program for two years, unless he presents an excuse acceptable to the Committee on Scientific Work.

Section 4. Parliamentary. The deliberations of this Society shall be governed by parliamentary usage as contained in the latest edition of Roberts' "Rules of Order," unless otherwise provided for in these By-Laws.

Section 5. Motions. At the demand of the President or Secretary, any or all motions or resolutions shall be made in writing, otherwise

the President shall declare them out of order, and the Society shall not consider them.

Section 6. Ethics. The "Principles of Medical Ethics" of the American Medical Association, as contained in the latest edition, shall govern the conduct of members in their relations to each other, to this Society, and to the public. The use of the word "specialist," by a member, in connection with his name in any newspaper, directory, or other public place shall be considered unethical.

Section 7. Publication. No report or criticism of the proceedings of any Session of this Society or of its House of Delegates or of its Council shall be made for publication except by the President or the Secretary, or by the Chairman of a Committee which has previously reported to the Society, to the House, or to the Council.

Section 8. Impeachment. The House of Delegates may, by a two-thirds vote of all its members, impeach any officer or committee of this Society. Such charges of impeachment shall be tried by the Council, and if sustained by a two-thirds vote of all the members of the Council, said convicted officer or committee shall be removed from office immediately.

ARTICLE V Members

Section 1. Classes. The membership of this Society shall consist of white citizens of the United States and of Canada who are in good standing in their component county medical societies, and whose annual assessments in this Society have been received by this Society.

The Society shall consist of Active and Associate Members. All members shall be graduates of an institution legally authorized to confer the degree of doctor of medicine and approved by the Medical Council of Delaware; they must be of good moral and professional standing, and not support or practice, or claim to practice, any exclusive or sectarian system of medicine.

Active Members shall be legally qualified to practice medicine in the state of Delaware and shall have resided and so practiced for a period of twelve months prior to application.

Associate members shall be:

(a) Medical Officers of the Federal Services who are licensed to practice in the state of Delaware but who desire Associate Membership rather than Active Membership.

(b) Medical officers of the Federal Services who are not licensed to practice in the state of Delaware.

(c) Physicians who are active members of this Society but who desire Associate Membership rather than Active Membership.

(d) Physicians who are licensed to practice in the state of Delaware, but who are not or have not been in active practice.

(e) Physicians who are not licensed to practice in the state of Delaware, who are engaged in teaching or research or in scientific work in the branches of knowledge allied to medicine, or who are employed in public health work or in industry.

Section 2. Honorary. Component county societies may establish honorary memberships in their own societies if they so desire, but

such membership shall not constitute membership in this Society.

Section 3. Changes. Members who change their status from active to associate in their component society shall have their status in this Society likewise changed, as of the same date.

Section 4. Voting, Etc. Only active members shall be eligible to vote; to hold office; to serve as delegates, or councilors, or on standing committees; or to the benefits of the Medical Defense Fund, or of the Benevolence Fund.

Section 5. Adjoining County. A physician or other eligible living on or near a county line may hold his membership in that county most convenient for him to attend, on permission of the county society in whose jurisdiction his office is located. Membership can be in only one component society.

Section 6. Transfers. When a member in good standing in a component society moves to another society in this or any other state, he shall be granted, without cost, a transfer card to the county society into whose jurisdiction he moves. His name shall be retained on the original roster until notice of his admission to another society shall have been received, except that if such notification is not received within twelve months of the issuance of said transfer card his membership in said county society shall cease.

Section 7. Privileges. Members whose annual assessments are received by the Secretary of this Society on or before April 1st of each year shall be entitled to all the privileges of this Society for the current year. One whose assessment is received after April 1st shall not be entitled to any benefit from the Medical Defense Fund from January 1st to the date of the receipt by the Secretary of this Society of his name and assessment.

Section 8. Suspension. Any person who is under sentence of suspension or expulsion from a component society, or whose name has been dropped from its roll of members, shall not be entitled to any of the rights or benefits of this Society, nor shall he be permitted to take part in any of its proceedings until he has been relieved of such disability.

Section 9. Appeals. Any member who may feel aggrieved by the action of the society of his county in censuring, suspending, or expelling him shall have the right to appeal to the Council of this Society, and its decision shall be final, unless reversed or modified after appeal to the Judicial Council of the American Medical Association under the rules and regulations of that body.

ARTICLE VI

Officers

Section 1. Executives. The executive officers of this Society shall be a President, two Vice-Presidents, a Secretary, and a Treasurer. Officers shall serve until their successors are elected and installed.

Section 2. Term. The term of officers shall be one year, from Annual Session to Annual Session.

Section 3. Election. All elections shall be by ballot, unless otherwise ordered, and a majority of the votes cast shall be necessary to elect. If after election an officer be found

to have been ineligible, said election shall be void and the office declared vacant. Vacancies in any office except that of President, shall be filled by the Council, until the next annual election.

Section 4. Election. The President shall be elected by ballot in the General Meeting, without the intervention of a Nominating Committee, as the last order of business before adjournment of the morning meeting of the second day of the Annual Session.

Section 5. Election. The other officers of this Society shall be elected annually by the House of Delegates. No member may be elected to any office who has not been in good standing for the preceding three years.

Section 6. Ineligible. Any person known to have solicited votes for or sought after any office within the gift of this Society shall be ineligible for any office for two years.

Section 7. President. The President shall preside at all meetings of the Society, and of the House of Delegates; shall appoint all committees not otherwise provided for; he shall deliver an annual address at such time as may be arranged, and perform such other duties as custom and parliamentary usage may require. He shall be, ex-officio, the President of the Council, and a member of all standing and special Committees with the right to vote. He shall visit by appointment each county society at least once during the year. He shall make an annual report to House of Delegates not later than August 1st of each year.

Section 8. Vice-Presidents. The Vice-Presidents shall assist the President in the discharge of his duties. In the event of the President's death, or removal, the vacancy shall be filled by the ranking Vice-President.

Section 9. Secretary. The Secretary shall attend the General Meetings of the Society, of the House of Delegates, and of the Council, and shall keep minutes of their respective proceedings in separate record books. He shall be, ex-officio, with the right to vote, the Secretary of the Council, and a member of the Committees on (1) Scientific Work, (2) Publication, (3) Public Relations, (4) Medical Economics, (5) Legislation, and (6) Women's Auxiliary.

He shall be custodian of all records, books, and papers belonging to the Society, except such as properly belong to the Treasurer, and shall keep account of and promptly turn over to the Treasurer all funds of the Society which come into his hands. He shall provide for the registration of the members and delegates to the Annual Sessions.

He shall, with the cooperation of the secretaries of the component societies, keep a register of all the legal practitioners of the state by counties, noting on each his status in relation to his county society, and, on request, shall transmit a copy of this list to the American Medical Association.

He shall aid the Councilors in the organization and improvement of the county societies, and in the extension of the influence and usefulness of this Society. He shall conduct the official correspondence, notifying members of meetings, officers of their election, and committees of their appointment and duties. He shall employ such assistance as may be ordered by the House of Delegates, or the Coun-

cil, and shall make an annual report to the House of Delegates not later than August 1st of each year.

He shall supply each component society with the necessary blanks for making their annual reports, and blanks for the Nominating Committee, and he shall distribute printed copies of new and amended By-Laws to the members. Acting with the Committee on Scientific Work, he shall prepare and issue all programs. The amount of his salary and bond shall be fixed by the Council.

Section 10. Treasurer. The Treasurer shall give bond in such sum as may be required by the Council. He shall demand and hold all funds of this Society, together with any bequests and donations and shall keep an account with the component societies, charging against each its assessment, and collect and deposit the same in such bank or trust companies as are designated by the Council. He shall pay money out of the treasury only on written order of the President, countersigned by the Secretary, or on order of the House of Delegates or the Council. He shall subject his accounts to such examination as the Council may order, and he shall annually render an accurate account of his transactions and of the state of the funds in his hands to the House of Delegates not later than August 1st of each year.

ARTICLE VII

House of Delegates

Section 1. Composition. The House of Delegates shall be the legislative body of the Society, and shall consist of (1) Delegates or Alternates elected by the component county societies in accordance with Article II, Section 5; (2) the Councilors elected by the county societies in accordance with Article VIII, Section 1; and (3) ex-officio, the President, the Secretary, the Treasurer of this Society and the immediate Past President, the Delegate (or the Alternate) of this Society to the American Medical Association, the President (or the Secretary if the President be absent), of each component county society; the Editor-in-Chief and the Managing Editor of the Journal of this Society. Fifteen members of the House of Delegates shall constitute a quorum.

Section 2. Vacancies. If any county society is without representation at the close of the roll call of any meeting of the House of Delegates, then the members registered in attendance from that county may select from their members the number of delegates which such society is regularly entitled to elect.

Section 3. Qualifications. No member of this Society shall be seated in the House of Delegates unless he be a member in good standing, as hereinbefore provided, for the preceding two years. A Delegate or Alternate once seated at any session of the House of Delegates shall remain seated throughout that session and any adjournment thereof.

Section 4. Meetings. The House of Delegates shall meet on the first day of the Annual Session. It may adjourn from time to time as may be necessary to complete its business, provided that its hours shall conflict as little as possible with the General Meetings. The order of business shall be arranged as a separate section of the program.

Section 5. Elections. It shall elect all the officers and standing committees of this So-

ciet, except the President, and shall elect in the odd years the Delegates and Alternates to the House of Delegates of the American Medical Association, in accordance with the Constitution and By-Laws of that body.

Section 6. Special Committees. Under its authority the President shall appoint special committees for special purposes from among members of the Society, who may or may not be members of the House of Delegates. Such committees shall report to the House of Delegates, and may be present and participate in the debate on their reports.

Section 7. Medical Examiners. It shall also designate a list of ten names of members of this Society, including those whose term will next expire, from which the Governor shall fill vacancies on the Board of Medical Examiners, as provided by law.

Section 8. Funds. It shall have final control of all funds and investments of this Society, except those that are received under a deed of trust or bequest. It shall specify the amount of the annual per capita assessment and any special assessments, and of the subscription cost of the Medical Journal to members of the Society.

Section 9. Scientific Work. It shall give diligent attention to and foster the scientific work and spirit of the Society, and shall constantly study and strive to make each Annual Session a stepping stone to future ones of higher interest.

Section 10. Public Relations. It shall consider and advise as to the interests of the public, wherein it is dependent upon the profession, and shall use its influence to secure and enforce all proper medical and public health legislation and to diffuse popular information of an educational nature in relation thereto.

Section 11. County Societies. It shall make careful inquiry into the condition of the profession of each county in the state, and shall have authority to adopt such methods as may be deemed most efficient for building up and increasing the interest in the county societies. It shall specially and systematically endeavor to promote friendly intercourse among physicians of the same locality, and shall continue these efforts until every physician in every county of the state who is reputable has been brought under organized medical society influence.

Section 12. Resolutions. It shall approve all memorials and resolutions issued in the name of the Society before the same shall become effective.

ARTICLE VIII

Council

Section 1. Composition. The Council shall be the judicial body of the Society, and shall consist of (1) the Councilors, elected by the county societies, for a term of three years, from among their members in good standing for the preceding two years, from one county society each year, in rotation, and in the following numbers: from Kent County, one; from Sussex County, one; from New Castle County, two, one from the city of Wilmington, and one from the rural sections; (2) ex-officio, the President, the Secretary, and the Treasurer of this So-

ciety, and the Editor-in-Chief and the Managing Editor of the Journal of this Society.

Section 2. Duties. Its duties shall be to act as: (a) a Board of Censors; (b) a Defense Committee; (c) a Finance Committee; (d) a Board of Trustees; (e) a Benevolence Committee, and (f) an Executive Committee. Five members shall constitute a quorum.

Section 3. Meetings. The Council may meet on the day preceding the Annual Session, and daily during the Session, and at such other times as necessity may require. It may elect a temporary chairman and a clerk, who, in the absence of the President and the Secretary of the Society, shall preside and keep a record of its proceedings. It shall, through the Secretary, make an annual report to the House of Delegates, not later than August 1st of each year.

Section 4. Councilor. Each Councilor shall be the judicial representative of this Society in his district. He shall inquire into the condition of the profession, and endeavor to improve and increase the zeal of the county society and its members. He shall make an annual report of his work and of the condition of the profession of his county to the House of Delegates not later than August 1st of each year.

Section 5. Censors. The Council shall be the Board of Censors of the Society. It shall consider all questions involving the rights and standing of members, whether in relation to other members, to the component societies, or to this Society. All questions of an ethical nature brought before the House of Delegates or a General Meeting shall be referred to the Council without discussion. It shall decide all questions of discipline affecting the conduct of members or of competent societies on which an appeal is taken from the decision of a county society, and its decision in all such matters shall be final, unless reversed or modified after appeal to the Judicial Council of the American Medical Association, under the rules and regulations of that body.

Section 6. Hearings. In hearing appeals the Council may admit oral or written evidences, as in its judgment will best and most fairly present the facts, but in case of every appeal, both as a Board and as individual Councilors, efforts at conciliation and compromise shall precede all such hearings.

Section 7. Defense Committee. The Council shall be the Defense Committee of the Society. It shall investigate all applications for Medical Defense, shall determine the validity of such applications and shall prescribe the procedure to be followed by the defendant, in accordance with Article XI, Section 7. The Council will only defend suit brought in the course of legitimate professional work. It will not pay judgment awarded or fine imposed by the jury or court.

Section 8. Finance Committee. The Council shall be the Finance Committee of the Society, and all resolutions appropriating funds of this Society shall be referred to the Council before action is taken thereon. It shall audit the accounts of the Treasurer and all other fiscal agents of this Society and present a statement of said audits in its annual report to the House of Delegates. This report shall also include an annual budget for the ensuing year.

Section 9. Trustees. The Council shall be the Board of Trustees of the Society. It shall report the character and amount of all properties belonging to the Society, and shall perform such other duties as are required of Trustees by law.

Section 10. Benevolence Committee. The Council shall be the Benevolence Committee of the Society, and shall administer the Medical Benevolence Fund in accordance with Article XI, Section 8.

Section 11. Executive Committee. The Council shall be the Executive Committee of the Society, and shall have full authority and power of the House of Delegates between Annual Sessions, unless the House of Delegates be called into special session as provided for in Article III, Section 4. However, it shall not have the power to nullify or repeal any resolution of the House of Delegates.

Section 12. Special Committees. The Council shall have the power to appoint special committees for special purposes from among members of the Society, who may or may not be members of the Council. Such committees shall report to the Council, and may be present and participate in the debate on their reports.

ARTICLE IX

Standing Committees

Section 1. Character. The Standing Committees of this Society shall be:

1. Committee on Scientific Work.
2. Committee on Publication.
3. Committee on Public Relations.
4. Committee on Medical Economics.
5. Committee on Legislation.
6. Committee on Woman's Auxiliary.
7. Committee on Necrology.
8. Committee on Nominations.

Section 2. General. Standing Committees shall be elected annually by the House of Delegates from among the members who have been in good standing for the previous two years. Their term shall be for one year, from Annual Session to Annual Session. The President shall be, ex-officio, a member of all such committees with the right to vote. A majority of a committee shall constitute a quorum. Vacancies in Standing Committees shall be filled by the Council until the next Annual Session. Standing Committees shall make an annual report, through the Secretary, to the House of Delegates not later than August 1st of each year, and may be present and participate in the debate on their report.

Section 3. Scientific Work. The Committee on Scientific Work shall consist of three members, of whom the Secretary shall be one. It shall determine the character and scope of the scientific proceedings of the Society for each Session, subject to the instructions of the President and/or of the House of Delegates.

Thirty days previous to each Annual Session it shall prepare a program, to be issued by the Secretary, announcing the order in which papers, discussions, and other business shall be presented. It shall acquaint those who are to be on the program with the conditions attached thereto.

Section 4. Publication. The Committee on Publication shall consist of three members, of whom the Secretary shall be one. It shall publish a Medical Journal and appoint an

Editor and such other necessary personnel, who may or may not be members of the committee, as may be required for that purpose, and shall stipulate the terms and conditions thereof. It shall supervise the publication of the papers and transactions of this Society, of the program of the Annual Sessions, and of any special books or documents issued in the name of this Society. It shall perform such other duties as may be delegated to it by the House of Delegates or the Council.

Section 5. Public Relations. The Committee on Public Relations shall consist of five members, of whom the Secretary shall be one. It shall have general supervision of all special contacts with the press, radio, civic and other organizations, and the public at large. It shall conduct and direct campaigns of public education in matters of public health and hygiene. It shall assist the county societies in similar campaigns, and shall act as a source of information to individuals or civic or state bodies, who seek enlightenment on matters of public health, medical legislation, or scientific medicine.

Section 6. Medical Economics. The Committee on Medical Economics shall consist of five members, of whom the Secretary shall be one. It shall investigate matters affecting the economic status of physicians and make recommendations for the improvement thereof.

Section 7. Legislation. The Committee on Legislation shall consist of five members, of whom the Secretary shall be one. Under the direction of the House of Delegates, it shall represent the Society in securing and enforcing legislation in the interest of public health and of scientific medicine. In the interim between the meetings of the House of Delegates it is authorized to undertake such activities as in its judgment will further the purpose it represents.

Section 8. Woman's Auxiliary. The Committee on Woman's Auxiliary shall consist of three members, of whom the Secretary shall be one. It shall advise the Auxiliary on matters referred to it by the Auxiliary.

Section 9. Necrology. The Committee on Necrology shall consist of three members. It shall report all deaths of members occurring during the year.

Section 10. Nominations. The Committee on Nominations shall consist of five members, of whom the immediate Past President shall be one. It shall prepare a list of nominees for all offices, standing committees, delegate to American Medical Association, representative to the Delaware Academy of Medicine, and members of the State Board of Medical Examiners, to be balloted for at the annual meeting of the House of Delegates. It shall not be mandatory upon the House to elect any or all of the members so nominated, but any member of the House shall have the right to nominate for any office, etc., any member of the Society who has been in good standing for the requisite number of years.

ARTICLE X

Special Committees

Section 1. General. There shall be such Special Committees for special purposes as may be necessary, but no Special Committee may be authorized to replace any Standing Committee.

Special Committees shall be appointed by the President, unless named in the resolution or authorization. The President shall be, ex-officio, a member of all such committees, with the right to vote. A majority of a committee shall constitute a quorum. Vacancies in a Special Committee shall be filled by the President. The term of a Special Committee shall be for one year, from Annual Session to Annual Session, unless otherwise specified in the resolution of authorization. Special Committees shall make an annual report, through the Secretary, to the House of Delegates not later than August 1st of each year, and may be present and participate in the debate on their reports.

Section 2. Arrangements. There shall be a special Committee on Arrangements, which shall be appointed by the component society in which the Annual Session is to be held. It shall provide suitable accommodations for the meetings of the Society, of the House of Delegates, of the Council, and of their respective committees, and shall have charge of all the local arrangements for the Annual Session. Its chairman shall report an outline of the arrangements to the Secretary not later than August 1st of each year, for publication in the program, and shall make such additional announcements during the Session as occasion may require.

ARTICLE XI

Funds and Expenses

Section 1. Funds. Funds for meeting the expenses of the Society shall be raised by an equal per capita assessment on each component society, by special assessment, by voluntary contributions, from the publications of the Society, and in any other manner approved by the House of Delegates. All moneys due to and belonging to the Society shall be paid into the hands of the Treasurer. These moneys may be invested by the Treasurer under the direction of the Council.

Section 2. Assessment: Per Capita. The amount of per capita assessment shall be fixed annually by the House of Delegates, but shall not exceed the sum of ten dollars per capita per annum. The per capita assessment for Active Members shall be six dollars per annum. The per capita assessment for Associate Members shall be three dollars per annum.

The assessment of new members, elected and reported between April 1st and September 1st shall be one-half the annual assessment. Assessments received for new members elected and reported in September shall be the full annual assessment, which shall cover the assessment for the following fiscal year.

Section 3. Assessments: Special. Special assessments may be levied by a vote of two-thirds of the members of the House of Delegates present and voting at any meeting, provided that notice of said assessment shall have been mailed to each member of the House of Delegates five days previous to the meeting at which action is to be taken. Special assessments shall be due and payable within sixty days of the vote to assess.

Section 4. Contributions. Voluntary contributions may be received, as occasion may require, for any object approved by the House of Delegates. No person may solicit contribu-

tions in the name of the Society except with the approval of said House.

Section 5. Remission. The Council, upon recommendation of a component society, shall have power to remit the assessments and other financial obligations to this Society of any member who on account of sickness, age, or other legitimate cause is unable to pay the same. The name of the beneficiary shall be made known only to the members of the Council.

Section 6. Appropriation. Funds shall be appropriated by the House of Delegates to defray the expenses of the Society, for publications, and for such other purposes as will further the interests of this Society. All resolutions appropriating funds must be referred to the Council before action is taken thereon.

Section 7. Defense Fund. Each year, out of the funds of this Society, a sum not to exceed one dollar for each active member may be set aside by the House of Delegates as a special fund to be known as the Medical Defense Fund. This fund shall be kept separate from other moneys, and may be invested by the Treasurer under the direction of the Council, and shall be used only for the legitimate expenses of members threatened with or prosecuted for alleged malpractice; provided, however, that no member of this Society shall be entitled to the benefits of this Fund who was not in resident practice in the state of Delaware when the alleged act of malpractice was committed.

Section 8. Benevolence Fund. Each year, out of the funds of this Society, a sum not to exceed one dollar for each active member may be set aside by the House of Delegates as a special fund to be known as the Medical Benevolence Fund. This fund shall be kept separate from other moneys, and may be invested by the Treasurer under the direction of the Council, and shall be used only for the relief of pecuniary distress of sick or aged members, or the parents, widows, widowers, or children of deceased members.

Section 9. Fiscal Year. The fiscal year of the Society shall be from Annual Session to Annual Session, and all books, records and accounts shall be balanced conformably thereto.

ARTICLE XII

Seal and Insignia

Section 1. Seal. The Seal of the corporation shall be a double circle bearing the legend "Medical Society of Delaware" between the circles, and in the center of the inner circle a device as per cut,



and the Seal shall be kept by the Secretary.

Section 2. Insignia. The Society may adopt for the exclusive use of its members such buttons, badges, emblems, robes, or other insignia as it may from time to time determine.

ARTICLE XIII

Referendum

Section 1. General Meeting. A General Meeting of this Society may, by a two-thirds

vote of the active members present, provided these number at least fifty members, order a general referendum on any question pending before or on any action taken by the House of Delegates, and when so ordered the House of Delegates shall submit such question to the members of this Society, who may vote by mail or in person within fifteen days, and if the members voting shall comprise a majority of all of the active members of the Society, a majority of such vote shall determine the question and be binding on the House of Delegates.

Section 2. House of Delegates. The House of Delegates may, by a two-thirds vote of its members, submit any question before it to a general referendum, as provided in the preceding section, and the result shall be binding on the House of Delegates.

ARTICLE XIV

Amendments

Section 1. Procedure. The House of Delegates may amend these By-Laws at any Annual Session by unanimous consent, after lying over one day, provided there be at least twenty-five members of the House present and voting.

If there be a dissenting voice, the amendment shall lie over one year, shall be published in the Journal of this Society at least two months before the next Annual Session, and shall be printed in the official program of that Session. Then the House of Delegates, at the next Annual Session, may adopt the amendment by a two-thirds vote of its members.

Section 2. Printing. Upon the adoption of any amendment, a printed copy of the same shall be mailed by the Secretary to each member within thirty days.

Tuberculosis work has consistently stressed the major importance of positive health, of being more physically fit than the immediate demands of your life seem to require. This we may well call the margin of safety in living. Doctor Edward L. Trudeau was not quite wise in advocating too early exercise for his patients but he was basically sound in his faith in the health-giving power of the outdoor life.

In its advocacy of personal hygiene, of physical fitness as a worthy objective *per se*, the tuberculosis control movement has led the field. It has the position of spike horse on the public health team and has trampled a path for the others to follow. Kendall Emerson, M. D.

Look to your health; and if you have it, praise God and value it next to a good conscience; for health is the second blessing that we mortals are capable of; a blessing that money cannot buy.—Izaak Walton.

Editorial

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No. 7

SUPPLY AND DEMAND

One of the maxims of the Hitler textbook is that if your lie is big enough, and you tell it often enough, it will be accepted as truth. We are reluctant to believe that any American—individual or agency—would adopt that maxim as the rule and guide of an attempt to influence public opinion. But the evidence that certain American individuals and agencies have been, and are, doing just that is becoming impressive. To be specific, the assertion in high places that the people of this country “cannot get” the medical care they need is the opposite of true. The statement was originally made, some years ago, with reference to large numbers of people, a substantial part of the population. It was safer to put it in general terms, and it has been safer to keep it there; every reader or hearer of the publicity for the government health dole could feel that, while he wasn’t in the class supposed to be suffering for lack of it,

the other fellow might be. At no time, however, has there been any collection of data on the “other fellow”; never was there a statistical array of proof of any kind. Such proof, of course, would need to be a summary of individual cases. There weren’t enough, if, indeed, there were any, of those. The instance of a person dying because he or she, for any reason of economic status, actually couldn’t get the medical care that might have lengthened life would have been headline news everywhere—particularly in the papers supporting the trend that has fostered the broadcasting of the statement. No such headlines have appeared—for the reason that there haven’t been any such instances. The build-up, nevertheless, goes right on; the assertion that people “cannot get” medical care is repeated almost daily by those too regimentation-minded to ask, or to be interested in, who couldn’t get it, and when and where, and what it was that he needed and couldn’t get.

This, of course, is pure propaganda. Its purpose is to condition the public toward voting the acceptance of balm for its own publicity-created self-pity. Like so much of the propaganda of the last decade, it ignores not only the facts but also the fundamental laws that govern their significance. Among the latter is the law of supply and demand. The country is now suffering, and the war effort is being hampered, as the result of governmental interferences with the operation of this law. Innumerable attempts have been made to control the supply of one commodity or facility and to regulate the demand for another, with no consideration of anything but the establishment—and, naturally the payroll—of still one more alphabetical bureau. As to the matter of individual health, the protagonists of the government-administered plans are aiming at the control of the supply of medical services and facilities. But where is the demand that warrants this control? Where is the epidemic out of hand? Where are the poor who are crying for what they *need*—as distinguished, perhaps, from what they merely want? Public health phy-

sicians throughout the country are doing an excellent job; industrial physicians and private practitioners are doing a superlative job. They are overworked. But, who in this emergency—excepting where there is a union steward to watch him—isn't? And they are tired. But, who—excepting those who are attempting to heighten, and, in their own interests, capitalize, the national confusion—is not?

We *might* be impressed with the alleged demand for governmental control of medical care if we could find some facts and figures to show that the demand is more than merely alleged. We *would* be greatly impressed (and so, no doubt, would the recipients) if Washington would quit heckling the medical profession and begin awarding its members, individually and collectively, the Army and Navy "E's" which so many of them so richly deserve.

Editorial, *Indust. Med.*, July, 1943.

DELAWARE O. C. D.—URGENT

In order to facilitate the movement and provide for more adequate control of motor vehicles that should be permitted to move during periods of air-raid alarm (actual or test), the Office of Civilian Defense has determined to prescribe an official identifying device that may be used by those vehicles which are classified as "Emergency Motor Vehicles."

The primary identifying device is the Emergency Motor Vehicle Pennant. These pennants are white, in a shape of an equilateral triangle, with sides 18 inches in length. The basic insignia in red (the letters "CD" in red on a white triangle superimposed on a red circular field, 6 inches in diameter), is the only emblem to be used on the pennant.

Pennants should be mounted in an upright position at the forward left side of the vehicle and located so as to be visible from both sides without obscuring the vision of the driver. The most practical method is to attach the pennant to the front bumper on the left end of same.

These pennants are numbered and registered in the name of the person to whom issued, and in no case are they to be loaned or used except by the person to whom issued, and then *only* during an alarm. They will

be issued, on request, to all physicians assigned to hospitals and casualty stations, *who have signed the oath* of allegiance, copy of which has been mailed to all eligibles. If you have not returned this form to Dr. Samuel, Chief of EMS, you are urged to do this *at once*. This insignia will entitle the doctor to drive to his appointed station during an alarm, including the red signal, under the established rules, i. e., 15 miles per hour (strictly enforced); low-beam headlights at night; O. C. D. insignia properly displayed.

This is the only official insignia that is permitted under the Air Raid Protection Regulation of the Commanding General, Eastern Defense Command.

PREVENTION OF TICK FEVER

Pointing out that Rocky Mountain spotted fever (tick fever) is widespread in distribution throughout the country, George E. Baker, M. D., Casper, Wyo., points out in *The Journal of the American Medical Association* for July 24 that prevention of infection may be secured by simple means and the use of tick fever vaccine.

"Prevention of exposure to infection," he says, "is secured only by remaining out of localities where ticks abound. Such precautions are not at all times possible or feasible. Those entering infested localities should wear trousers, gathered by some means at the bottoms in order to prevent vectors from crawling up the legs. Ticks do not jump on those who pass their vantage points but lie in wait on low grass or vegetation not over a foot and a half above the surface of the ground, actively moving their numerous serrated legs, by which means they seek transfer to objects that brush by. Clothing should have a minimum of seams and openings in order to prevent their ingress to body surfaces. Smooth clothes prevent ticks from gaining footholds, yet those with a rough nap impede their progress once they have got on the body covering. It is a good plan while in tick infested localities to pass the hand occasionally over the back of the neck in order to detect crawling ticks. They may gain access to the body by working themselves beneath the collar.

"Clothing should be removed at least two or three times a day and the body thoroughly

examined for the presence of crawling or attached ticks. As they hide away in body folds, crevices and hairy portions free from rubbing, a diligent search must be conducted. Camps should be located where rodents are few, preferably in places where no low grass, sagebrush or small bushes are growing. Wooded areas along creek banks are best avoided, as are the vicinities of old trails and roads. Ideal camping spots are usually where standing timber is present with a minimum of low vegetation. Persons must again inspect their persons, clothing and bedding before retiring for the night in the open. The precaution is most important when 2 persons sleep in close proximity. Infected ticks may attach themselves to both persons successively. The first one may escape infection or be but mildly ill, the second one more seriously so from reactivation of virus in the tick vector by blood ingestion from the first victim. While in tick infested localities it is unwise to leave bedding spread on the ground during the day. It attracts ticks, often from a considerable distance. After return from trips, clothes and bedding should be carefully gone over, aired and then removed to buildings not used for human habitation. Once ticks have taken up their abode in a location, eradication is apt to prove most difficult and uncertain. . . .

"Tick vaccine gives protection against tick fever. It is prepared by the Rocky Mountain Laboratory of the National Institute of Health, Division of Infectious Diseases, at Hamilton, Mont., and is dispensed to physicians desiring it for the purpose of immunizing those who run the danger of being exposed to the disease. . . . The degree of protection afforded by vaccine and the duration of such protection varies with vaccinated persons and the virulence of infection to which they are exposed. As a rule, those vaccinated in the spring of the year retain a considerable degree of immunity for at least the remainder of that year. . . . In order to afford the greatest degree of protection possible, it is recommended that immunization be performed each year. . . ."

Dr. Baker explains that the highest incidence of tick fever in the western area of the United States is from the early spring into the early summer months. In the mountainous

regions it is highest during the late spring months, owing to delay in the advent of warm weather. In the eastern areas the disease is more prevalent in the late spring and early summer months, but cases can occur in the fall of the year.

"Treatment of tick fever is purely symptomatic and supportive in character," the doctor says. "There is no specific. Its absence must not predispose to an attitude of helplessness and hopeless inactivity on the part of those caring for the disease. . . Vigorous yet well directed procedures bring about successful outcomes for many patients whose recovery appears hopeless at the time they are first placed under care.

"Bed rest with good nursing care is necessary from the beginning of the illness in order to conserve strength as much as possible. At the onset patients frequently do not appear ill enough to make the precautions necessary, but the rapidity with which serious manifestations appear makes those in attendance thankful that they have been insisted on. Patients must be kept as quiet as possible, both mentally and physically. Baths, packs and simple sedation are often effective. . . ."

Dr. Baker explains that tick fever is closely related in many respects to typhus fever. In the areas in the west where it is common the wood tick is the principal source of the infection. Since warm, dry weather brings the wood tick into full activity, it is possible that in any locality tick fever can occur in the colder months of the year provided there is an abundance of warm sunshine or adequate conditions of artificial heat. Transmission of tick fever by species other than wood ticks is apparently possible. At least eight other species have been incriminated.

Tick fever has a usual incubation period of from four to eight days, the extremes being two to twelve. The initial manifestations of the disease resemble those of any fever illness, there being discomfort, headache, loss of appetite and chilly sensations. These vary in degree, lasting an average of two or three days. The disease usually has an abrupt onset, initial symptoms often appearing in the late afternoon or early evening. There is a definite chill, pronounced frontal headache and severe aches and pains in the muscles, bones

and joints, the latter being more pronounced in the back and lower extremities.

"Tick fever may be confused with various other infections," Dr. Baker says, "particularly when the disease appears unexpectedly in a locality or if encountered by those unfamiliar with its manifestations. The diseases most commonly causing confusion are typhoid and allied conditions, severe measles, smallpox, epidemic meningitis . . . undulant fever . . . typhus fever and Colorado mountain fever. . . ."

In spite of the steady improvement in diagnostic techniques and facilities during the past twenty years, little substantial progress has been made in finding cases of early tuberculosis. The reasons for this failure are too well known to call for discussion here. Briefly they can be reduced to two facts: early tuberculosis rarely gives rise to symptoms, and apparently well people seldom consult a doctor. Henry D. Chadwick, M. D. and Alton S. Pope, M. D.: *The Modern Attack on Tuberculosis*.

Tuberculosis is an infectious disease but it is not to be confused with the acute infectious diseases in which the microbiological agents, bacilli, protozoa or viruses, dominate and determine the course and final outcome of the disease, mostly in a few days or weeks. Tuberculosis is a very chronic disease, the subsequent course of which after the primary infection has taken place, is determined by the social environmental conditions under which the individual is compelled to live, as well as by his hereditary constitution. G. Wolff and A. Cioceo: *Amer. Rev. of Tuber.*, Aug., 1942.

BOOK REVIEWS

Methods of Treatment. By Logan Clendenning, M. D., and Edward H. Hashinger, M. D., Clinical Professors of Medicine, University of Kansas. Eighth Edition. Pp. 1033, with 138 illustrations. Cloth. Price, \$10.00. St. Louis: C. V. Mosby Company, 1943.

This old favorite, which first appeared in 1923, has been brought fully up to date, with many new discussions added, and revisions of several older items. The strength of this book, and hence its popularity, hinges upon the definiteness and the clarity of the instructions

as to the technique of therapeutic procedures, wherein the text is ably assisted by the illustrations, making a combination that is perhaps without equal in its field. We have no doubt this eighth edition will fully sustain the vogue of its predecessors, and we heartily recommend it.

Nutrition and Diet in Health and Disease. By James S. McLester, M. D., Professor of Medicine, University of Alabama. Fourth Edition. Pp. 849. Cloth. Price, \$8.00. Philadelphia: W. B. Saunders Company, 1943.

Dr. McLester has covered the entire field of nutrition and diet in health and disease in a most comprehensive and practical manner: a timely book containing all the information so necessary for physicians in any branch of medicine.

Vitamins are thoroughly discussed as to their source, effect and requirements in health and disease. Foods from all sources are considered, with many charts giving various vitamin content, as well as food values.

Deficiency diseases, especially those due to vitamin deficiencies, are described fully, and methods for prevention and cure are given in detail. The chapter on diabetes mellitus and the fundamentals of its treatment, with diet lists, etc., is an outstanding work in itself.

This book is indeed a masterpiece! May there be many more editions.

Manual of Cardiology. By Thomas J. Dry, M. B., Assistant Professor of Medicine, University of Minnesota (Mayo Foundation). Pp. 310, with 80 illustrations. Cloth. Price, \$3.00. Philadelphia: W. B. Saunders Company, 1943.

An ideal manual should be authoritative and informative, as well as concise. That all of these ends can be accomplished in the difficult field of cardiology is herewith demonstrated. After discussing the fundamentals of the normal heart, the symptoms and signs relating to disturbed physiology and pathology are presented in logical order, and the reader cannot help being impressed with the sound reasoning and observations involved. The various specific diseases of the heart are very clearly discussed, with appropriate figures and diagrams. An excellent chapter is devoted to the mode of production of abnor-

mal electrocardiographic patterns, and illustrative electrocardiograms are used throughout the text. Finally, very practical chapters are devoted to treatment, congestive failure, and the cardiac neurosis. The manual is highly recommended to the student or physician who seeks quick, practical, and useful information in the entire field of cardiology.

Rehabilitation of the War Injured. Edited by William Brown Doherty, M. D., and Dagobert D. Runes, M. D. Pp. 684, illustrated. Cloth. Price, \$10.00. New York: Philosophical Library, 1943.

This symposium consists of 53 papers reprinted from some 20 American and British journals and two book publishers. The papers are divided as follows: neurology and psychiatry, 8; reconstruction and plastic surgery, 16; orthopedics, 5; physiotherapy, 7; occupational therapy, 14; legal aspects, 2; miscellaneous, 1. The editors have thus brought together much timely material, all devoted to rehabilitation. This symposium is a companion to "War Medicine," which was reviewed in October, 1942. Both of these volumes lack an index, which renders them much less available for quick reference; material as varied and valuable as this should be thoroughly indexed and cross-indexed.

Medical Malpractice. By Louis J. Regan, M. D., LL. B. Pp. 256. Cloth. Price, \$5.00. St. Louis: C. V. Mosby Company, 1943.

This new work, by a doctor-lawyer, fills a want long felt by the medical profession. With the great increase in recent years of legal threats or actions against physicians for alleged malpractice, the profession has needed a brief text that points out the doctor's liability to his patient and the ways in which he may safeguard himself against actionable claims. At long last, here is the book. Devoted exclusively to this one branch of legal medicine, Regan's book is concise and complete. The amount of meaty material included is impressive. The various problems are discussed, and then cases cited. His unique "self-test" is illuminating; we tried it ourselves.

This book is for *every* practitioner; and doctor, after you get the book, you'd better read it carefully!

Atlas of Surgical Operations. By Elliott C. Cutler, M. D., Professor of Surgery, Harvard University; and Robert Zollinger, Assistant Professor of Surgery, Harvard University. Eighth printing. Pp. 181. Cloth. Price, \$9.00. New York: The MacMillan Company, 1942.

This popular Harvard opus, originally published in 1939, had reached its eighth and latest printing in 1942, proof enough of its value. This work consists of pen and ink drawings on folio size pages, opposite which is a page of text which gives the indications, preoperative technique and postoperative care. Together, they present the *common* operations of surgery and gynecology, in a fully adequate way. The authors modestly state that this work will be of value to the beginner in surgery; we know it will be of great value to the experienced surgeon who wants to brush up on some little point the night before. The 84 plates contain 760 drawings, possible only by the utilization of a page $10\frac{3}{4}$ by $14\frac{3}{4}$ inches, and this average of 9 drawings per plate means that most operations can be depicted on one plate—a very concentrated guide. Surgical atlases are not new, in fact they go back to the Middle Ages, but this atlas is new, in the sense that the best thought and experience of present-day surgeons is illustrated and described. This is, therefore, one of the outstanding guides of modern surgery and should be in the library of every busy surgeon.

Manual of Fractures: Treatment by External Skeletal Fixation. By C. M. Shaar, M. D., Captain, Medical Corps, U. S. Navy; and Frank P. Kreuz, Jr., M. D., Lieut.-Commander, Medical Corps, U. S. Navy. Pp. 300, with 148 illustrations. Cloth. Price, \$3.00. Philadelphia: W. B. Saunders Company, 1943.

The title of this Manual amply describes it. The authors frankly state that external skeletal fixation is to be used when and where routine and other measures are not applicable. For this, the authors prefer the splint devised by Otto Stader, the veterinarian who has been treating fractures in dogs so successfully with his device since 1937. We are going to hear a lot more about this Stader splint in the future—for humans. In addition, the authors discuss delayed union, non-union, complications, anesthesia and x-ray study. Also described is Shaar's anti-pendulum apparatus for use at sea; likewise bone

grafts and arthrodesis. The illustrations amply fortify the text, which is a well written one, devoid of excess verbiage. This is a book we can recommend most highly, especially since it deals fully with the splint of the future—the Stader splint.

New and Nonofficial Remedies, 1943, containing descriptions of the articles which stand accepted by the Council on Pharmacy and Chemistry of the American Medical Association on January 1, 1943. Pp. 772. Cloth. Price, \$1.50. Chicago: American Medical Association, 1943.

The current volume of New and Nonofficial Remedies continues, with minor improvements, the convenient and informative system of classification adopted for the 1942 volume. The terminology of the official drugs has been revised to conform to the U. S. P. XII and the N. F. VII. One notes that the valuable bibliographic index now appears on white instead of "India Tint" paper, a wartime necessity no doubt. This index appears before the general index which is now more properly placed at the end of the book. To one accustomed to the old format of New and Nonofficial Remedies the new arrangement appears at first somewhat awkward, but with a little use the wisdom and convenience of the changes becomes more and more apparent.

Textual changes and revisions do not appear to be as numerous as in some previous editions. The chapter, Digitalis and Digitalis-like Principles and Preparations, has been extensively and somewhat radically revised to keep pace with the changing attitude toward this drug. It is understood that in this revision the Council had the aid of the foremost digitalis authorities, pharmacologists and clinicians alike. Other revisions have been made obviously to keep the book up to date with medical knowledge.

No such spectacular new additions as the appearance in a previous volume of the sulfonamides is to be noted. Among the more noteworthy of the new additions are Nike-thamide, the central nervous system stimulant which was first introduced as Coramine; Diethylstilbestrol, the synthetic estrogen; Trichi-nella Extract for the diagnosis of trichinosis; and Zephiran Chloride, a mixture of alkyl dimethyl benzyl ammonium chlorides, an interesting new anti-infective agent.

No one can examine the successive volumes of New and Nonofficial Remedies without increasing his profound respect for the faithful and unselfish work of the Council on Pharmacy and Chemistry in the cause of rational therapeutics. Each volume represents a progressive milestone on the road of medical science.

Reports of the Council on Pharmacy and Chemistry. Issued under the direction and supervision of the Council on Pharmacy and Chemistry of the American Medical Association. Pp. 207. Cloth. Price, \$1.00. Chicago: American Medical Association, 1943.

Through the years the size of this volume has grown with the increased work of the Council on Pharmacy and Chemistry until the present edition has the same number of pages as the book published in 1908, which covered the Council's first four years of activity. Some of the functions of this group are well known, but a more thorough understanding of the Council's scope may be gained from the annual reprint. This volume epitomizes that phase of the Council's work which may be said to be collateral to the "acceptance" of drugs — the informative consideration of current medical problems in the interest of rational therapeutics. It contains reports of studies by private investigators which were originally published in THE JOURNAL under the sponsorship of the Council, such as preliminary discussions of new developments in therapeutics and timely articles on the status of recognized agents as well as reports of omission or rejection of products from New and Nonofficial Remedies. It also offers a record of current decisions on matters of Council policy.

Several of the reports are of particular interest for various branches of medical science: the use of bulk ether in anesthesia, the absorption of surgical gut (catgut), the higher types of antipneumococcus rabbit serum, the surgical and medical treatment of animals with experimental hypertension, and the status of racemic epinephrine solutions for oral administration. The reports in this small compact volume represent expert medical consensus and are proffered to aid in the consideration of the value of therapeutic agents.

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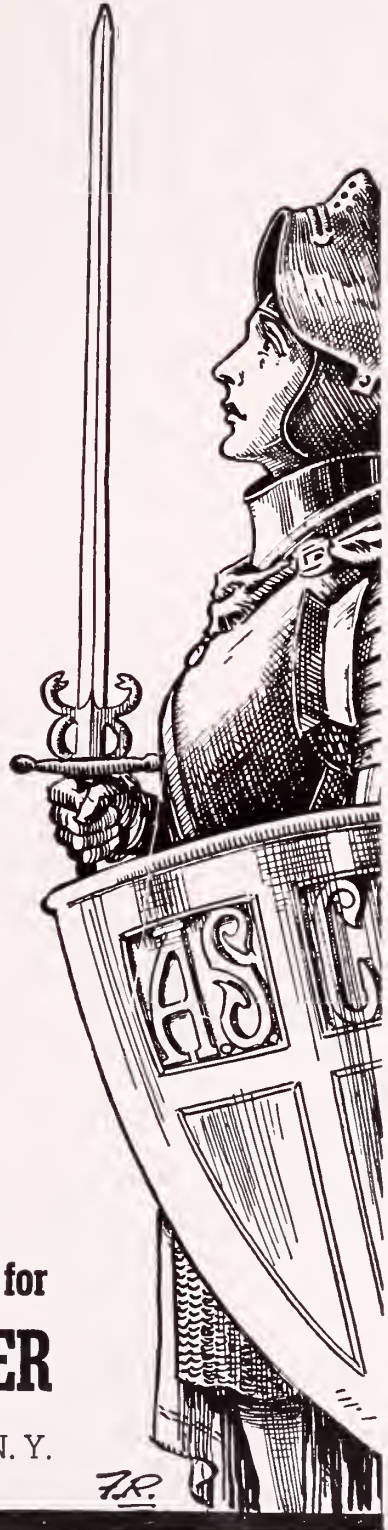
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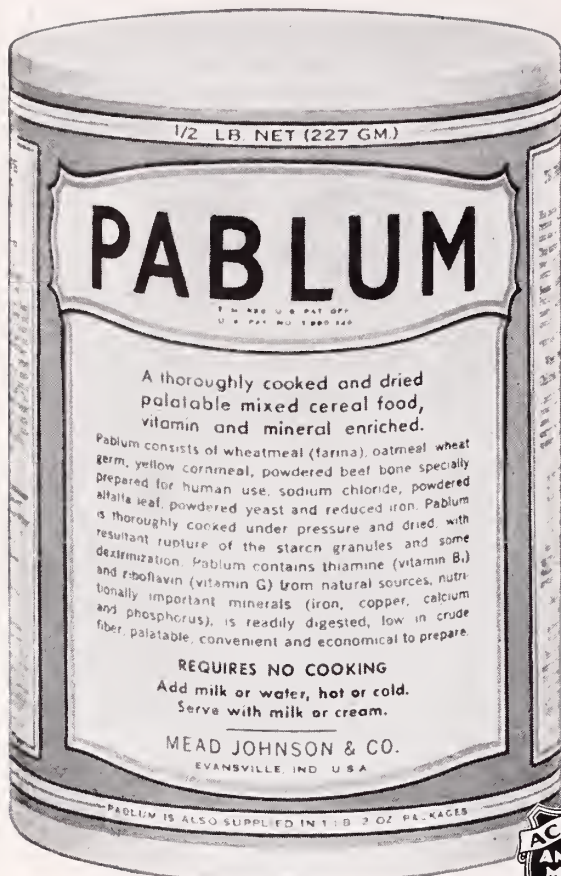
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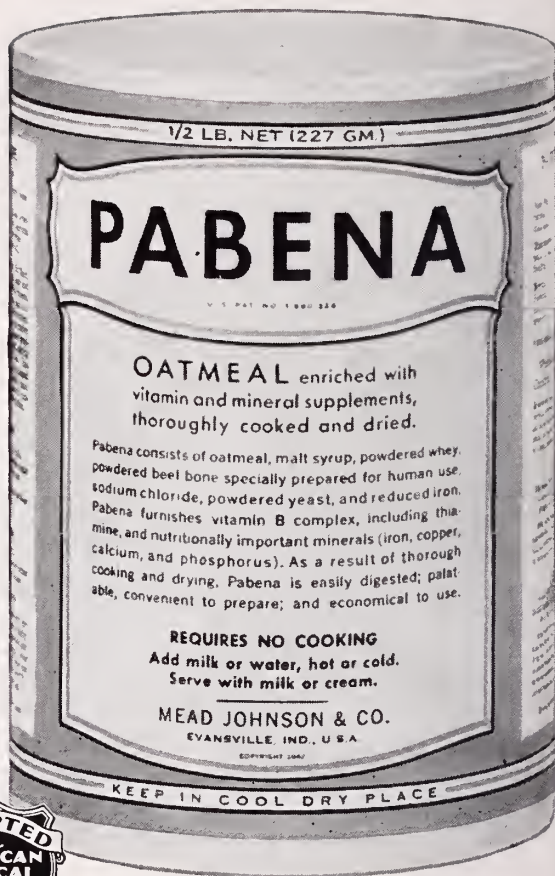
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Proc. Soc. Exp. Bio. and Med.*, 1934, 32, 241-245 *Laryngoscope*, 1935, XLV, No. 2, 149-154

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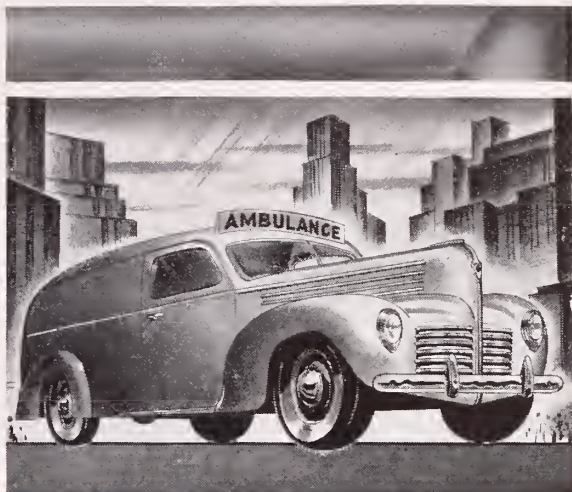
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ROCKY MOUNTAIN SPOTTED FEVER A Summary of Recent Literature Dealing With Virulence and Therapeutic Value of Immune Rabbit Serum

EDWIN CAMERON, M. D.,*
Dover, Del.

At the time of this writing considerable public interest is being displayed over the apparent increase in the incidence of Rocky Mountain spotted fever in Delaware. As would be expected, a similar degree of interest was displayed by physicians, particularly those who were treating the cases.

Recent literature on Rocky Mountain spotted fever is somewhat diversified in nature, ranging from discoveries of new vectors of the disease to studies of the newest therapeutic agent. In this article an attempt is made to draw together the outstanding points of these studies and present the conclusions of the various authors.

For several years it has been generally accepted that the western strain of the virus of Rocky Mountain spotted fever was more virulent than the eastern strain and hence accompanied by a higher mortality rate. This conclusion was based on virulence tests in guinea pigs. In recent years, however, a new strain was recovered from a case receiving his infection in Virginia, which was as virulent to guinea pigs as the western strains. Moreover, at about the same time, from a case receiving his infection in Wyoming, there was recovered a strain the virulence of which was extremely mild for guinea pigs.

Prior to the recovery of these "new" strains in both east and west the Division of Infectious Diseases, National Institute of Health had published statements in discord with the accepted difference in virulence and fatality between eastern and western strains.

Following up the recovery of these two strains, Topping¹ reports a study of cases oc-

curring in the 10-year period 1930-39 inclusive which led to the conclusion that the disease is as fatal in the east as in the west. Material for his report was furnished by the State Departments of Health of Montana and Idaho in the west and of Maryland and Virginia in the east. Presented for study for the 10-year period were 747 cases from the west and 661 from the east.

TABLE I.

	West	East
Cases	747	661
Deaths	210	122
Fatality Rate	28.1	18.4

However, in the two western states 373 or 50.2% of the cases occurred in persons 40 years of age and over, while in the west this was reversed, there being 310 or 46.8% occurring in the age group under 15 years. The age distribution and fatality rate are shown below:

TABLE II.
Under 15

	Total Cases	Cases	% of Total	Deaths	Fatality Rate
West	747	108	14.4	13	12.0
East	661	310	46.8	40	12.9

15 - 39

	Cases	% of Total	Deaths	Fatality Rate
West	264	35.3	40	15.1
East	189	28.5	21	11.1

40 +

	% of Cases	Total	Deaths	Fatality Rate
West	375	50.2	157	41.8
East	162	24.5	61	37.5

The conclusion drawn here was that there was no significant difference in fatality rate in comparative age groups between the "eastern" and "western" type of the disease. It is obvious, however, that there is a very significant difference between the fatality rate in the age group 40 and over and those of the younger age groups.

There was no indication in the material from which the above was summarized of the nature of medication. However, Topping² again reports a series of experiments in which immune rabbit serum was used in treating infected guinea pigs and monkeys, and also a

* Executive Secretary, Delaware State Board of Health.

series of human cases in which the immune rabbit serum was used.

The conclusion reached in the experimental animals was that the time factor was extremely important even with a relatively small dose of serum. Repeated experiments with monkeys and guinea pigs indicated that an adequate dose given early following infection gave the best results.

In studying the human cases it was impossible to use an untreated group as a control, so the author of the report used the 10-year group of cases in Table II above and from the fatalities occurring within the group over an experience period of 10 years expectancy in fatality and fatality rates was applied to a series of 19 cases treated with immune rabbit serum after the third day of the rash, and to a series of 52 cases treated on or before the third day of the rash. These cases for a 2-year period, 1941-42, are summarized in Table III.

TABLE III

Treatment—immune serum		Under 15			15 - 33			40 +		
		Total	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths
After 3rd day of rash		19	10	1	4	0	5	1		
On or before 3rd day		52	26	0	14	0	12	2		

Next, the expectancy in cases and deaths were from Table II and applied to Table III with the following results:

TABLE IV

Observed and expected fatalities in 19 cases treated after the 3rd day of rash:

	Total	Under 15			15 - 39			40 ..		
		Cases	Deaths	Fatality Rate (%)	Cases	Deaths	Fatality Rate (%)	Cases	Deaths	Fatality Rate (%)
Observed (from Table III)	19	10	1	10	4	0	0	5	1	40
Expected (from Table II)	19	10	1.25	12.5	4	0.5	13	5	2	40

TABLE V

Observed and expected fatalities in 52 cases treated on or before the 3rd day of rash:

	Total	Under 15			15 - 39			40 +		
		Cases	Deaths	Fatality Rate (%)	Cases	Deaths	Fatality Rate (%)	Cases	Deaths	Fatality Rate (%)
Observed (from Table III)	52	26	2	3.8	12	2	16.6	14	0	0
Expected (from Table II)	52	26	9.8	18.8	12	4.8	40	14	1.8	13

While the series of cases are small and it might be dangerous to draw any conclusion from the interpretation, at least the inference is that immune serum is of value if used early in the infection. There would also appear to be a marked difference in fatality rates between the age group of forty and over and the others.

Up to the present there have been 13 cases reported in Delaware in 1943. These 13 cases were treated by 8 physicians; 9 of the 13 cases were treated with immune rabbit serum. There were 3 fatalities, one of whom had received immune rabbit serum.

In view of the fact that the disease is sporadic and that untreated controls cannot be used for comparison, it would be highly desirable that physicians keep a record of each case of this disease which might be made available for study.

(1) Topping, N. H.: Pub. Health Reps., 56: Aug. 22, 1941.
(2) Topping, N. H.: Pub. Health Reps., 58: May 14, 1943.

WEIL-FELIX REACTION
(ROCKY MOUNTAIN SPOTTED FEVER)

ROWLAND D. HERDMAN, B. S.,*
Dover, Del.

The Weil-Felix reaction, although nonspecific, affords a reliable method for the laboratory diagnosis of Rocky Mountain fevers and related diseases. On the other hand, studies based upon specificity, such as histological examinations of skin lesions, suggested by Frankel in 1914, and inoculation of blood from patients into guinea pigs, described by Nicolle in 1911, both important diagnostically, are not practicable routine procedures. The complement fixation test with specific extracts, as suggested by Cuthoire in 1910 and Markel in 1913, and the globulin test developed by Weltman in 1916 have not proved to be of diagnostic value.

In 1916 Weil and Felix found that a strain of proteus vulgaris isolated from the urine of a typhus fever patient was agglutinated to a high titer not only with serum of the patient but also by the serum of other individuals suffering from typhus. Apparently no direct connection exists between typhus fever and the proteus X bacillus since they are found in only a small number of patients, and are not demonstrable in the lesions, and

* Bacteriologist, Delaware State Board of Health.

do not produce the disease experimentally. Guinea pigs inoculated with proteus X bacilli are not subsequently immune to infectious typhus material nor can the bacilli be recovered after true typhus infections.

There is evidence to believe that a close relationship exists among the different types of typhus, and that the causative agent of typhus is related to that of Rocky Mountain spotted fever, tsutsugamuchi fever (Japanese river fever) and French disease called *fevre boutomense*. This has been determined to some extent by serological reactions and also cross-protection experiments in animals. The differential diagnosis of Rocky Mountain spotted fever and typhus by inoculation of male guinea pigs and by protection tests is carried out by very few laboratories in this country. The necessity for special equipment, maintenance of virus strains and expense make it an impractical procedure for routine public health laboratories.

In view of the marked specificity of the agglutination of proteus X strains in the sera of typhus fever patients it might seem that little difficulty would occur in making serologic tests for the presence or absence of the disease. However, in the studies made by Welch it was demonstrated that the cultivation of proteus X19 strains on certain media resulted in their dissociation. The variants which developed were found to give inaccurate results in Weil-Felix test when used as a control sera from patients with no clinical symptoms of the disease. In a study of 19 diagnostic proteus X strains obtained from laboratories in various sections of the United States and Canada, only six were nonmotile in spite of the fact that in several instances the motile strains had been obtained originally from nonmotile culture.

The diagnostic agglutinins present in the blood serum of typhus or Rocky Mountain fever patients are invariably of the somatic type, and the O type antigen made from nonmotile strains of proteus group should be used exclusively in making diagnostic tests, not only because the specific antigen relationship between the virus of Rocky Mountain spotted fever, etc., and proteus X19 but also because of the possible presence of flagellar agglutinins in the patients' serum which are not diag-

nostic of Rocky Mountain spotted fever. These nonspecific reactions will be obtained with motile strains of proteus X19 because of their antigenic relationship.

LABORATORY EXAMINATION

To establish the diagnosis, a series of three blood samples should be submitted in both questionable and clinically positive cases. The first is taken soon after the nature of the illness is suspected or when rash appears. At this time the blood is usually negative, but is needed to check the results from later samples; the second is taken between the 12th and 15th day and is often positive, particularly if results of the first sample are on hand for comparison, but titer is sometimes too low to be significant. The third is taken during early convalescence, and is usually definitely positive, but results of earlier tests may be needed for comparison. Occasionally a positive test is not obtained until 30 days after onset or even later. If only two specimens can be obtained, the first should be taken as soon as the nature of infection is suspected, and the second on the 12th day. A marked increase in titer ascertained by repeated examination is helpful in reaching a diagnosis.

SELECTIVE SERVICE EXAMINATIONS

From January 1st to June 30, 1943, 11,972 blood tests for the detection of syphilis were completed for the Selective Service Boards of Delaware. The blood specimens were examined by the Kahn presumptive test. The specimens which were positive or gave doubtful reactions by this test were then examined by Kahn standard precipitation test, and those which gave indefinite reactions were examined by Kolmer Wassermann. Of the total samples of blood examined, there were 9.3% positive; of which 1.2% were repeat specimens; thus 8.1% of all selectees were positive. By race, there were 8,876 specimens of blood from white men, of which 2.4% were positive and .4% of these specimens were repeat specimens; thus approximately 2% of the white selectees were positive. There were 3,096 specimens of blood from negro men during this period, of which 28.77% were positive, of which 2.46% were repeat specimens; thus approximately 26.31% of negro selectees were positive.

HIGH SCHOOL XRAY SURVEY

LAWRENCE D. PHILLIPS, M. D.*

ALFRED M. DIETRICH, M. D.**

G. TAGGART EVANS***

Marshallton, Del.

For the past several years the National Tuberculosis Association has been sponsoring an early diagnosis campaign on tuberculosis case finding during the month of April and May. This year the following slogan was adopted:

"FOLLOW THE EXAMPLE OF THE ARMED FORCES, AND GET A CHEST X-RAY"

There is plenty of good common sense in this slogan, because it is estimated more than a billion dollars has been spent caring for tuberculous World War No. 1 veterans. To forestall similar expenses after this greatest of all wars the armed forces have determined to keep tuberculosis out of the services. Since the spring of 1942 the government has provided chest x-ray service to every inductee. Prior to this time or until x-ray equipment was provided at the induction centers more than 2,000 Delaware selectees were x-rayed at the Brandywine Sanatorium. This was a cooperative project of the Selective Service system of the state, the official health agencies, members of the medical profession, the staff of the Brandywine Sanatorium and the Delaware Anti-tuberculosis Society. Thus an example has been set by the armed forces.

But what about the many more millions of men and women on the home front? What about the millions of young people in high schools and colleges, who will be the soldiers and industrial workers of tomorrow?

Soon after Pearl Harbor the Anti-tuberculosis Society began to adjust its program to fit into the war picture, with particular emphasis upon the protection of civilian health on the home front. The executive secretary was instructed to make searching inquiry into the various methods of mass xray surveys. In November of 1942 Dr. W. H. Lemmel, Superintendent of the Wilmington Public Schools, discussed with the Wilmington Board of Education the possibility of xraying high school students, as well as faculty members

and school employees. Later Dr. Lemmel made formal request in the name of the Board of Education to the Anti-tuberculosis Society for this service. The Society took immediate favorable action and authorized the executive secretary to complete details. After careful consideration of various methods, it was decided to employ the services of the National Xray Surveys, Inc., using the specially designed portable photo-roentgen 35 millimeter unit equipped with Zeiss lenses, developed exclusively for photo-roentgen work. This type of apparatus registers the chest images on a fluoroscopic screen from which is taken the 35 millimeter film. The project was prefaced in each high school by an intensive educational program which Dr. Lemmel stated was "a campaign to emphasize the importance of discovery and early treatment in the eradication of tuberculosis."

The scheduling of xraying approximately 7,500 people in many different schools located in various sections of the city was planned most efficiently by Mr. M. Channing Wagner, Assistant Superintendent of Schools in charge of Secondary Education and Health Service. Mr. Wagner was assisted by the following principals who aided in scheduling the work in their particular schools; William P. Baneroft School, Thomas W. Mulrooney; Thomas F. Bayard School, Robert N. Foulk; H. Fletcher Brown Vocational School, William E. White; George W. Carver Vocational School, Arthur D. Jewell; P. S. duPont High School, Ralph L. Talbot; Howard High School, George A. Johnson; Warner Junior High School, Frank M. Heal; Wilmington High School, Clarence A. Fulmer. The first xrays were taken at Wilmington High School on March 15th. More than 1,300 xrays were made the first two days, and then the equipment was moved to succeeding schools as scheduled. Each person received a card stamped with his name and a number. This card was then placed in the xray machine and the name and number were recorded on the film for each person. Before receiving the xray each person was measured for body depth or thickness on a callibrator machine. The equipment was operated by an xray engineer and three technicians of the National Xray Surveys, Inc.

* Superintendent, Brandywine Sanatorium.

** Assistant Superintendent, Brandywine Sanatorium.

*** Executive Secretary, Delaware Anti-tuberculosis Society.

In May the survey was expanded to include the xraying of students and faculty members of Wilmington's three parochial high schools: Salesianum High School, Ursuline Academy, and St. Elizabeth's, and the State College at Dover.

Details and scheduling for these schools were handled by the Rev. Joseph L. McCoy, Principal of Salesianum High School, and Mother Immaculata of the Ursuline Academy. The project then represented a complete survey of Wilmington's public and parochial high schools and far exceeded any similar survey ever conducted in the state.

When the xraying in each high school was completed the films were sent to the laboratory of the National Xray Surveys, Inc., for development. They were then sent to the Brandywine Sanatorium for interpretation. Later stereoscopic xrays were taken of any suspicious or abnormal appearing cases for further study and diagnosis.

	Total Number	Percent
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Total Number xrayed	7,501	
Number re-xrayed 14x17	141	1.9
Number to be re-xrayed	48	.64

Chest Findings:

Hilum Deposits	190	2.5
Pulmonary Nodule	215	3.
Pulmonary T. B., Min. Stable	3	.04
Pulmonary, T. B., Min., Unstable	3	.04
Pulmonary T. B., Mod. Adv., Unstable	2	.027
Pulmonary, T. B., Miliary, healed	1	.013
Salients	5	.07
Bronchiectasis	8	.11
Obliterated Costo-phrenic angle	4	.05
Adhesion of diaphragm	24	.32
Azygos Lobe	11	.15
Organized Pleural Effusion	2	.07
Cervical Rib	37	.45
Bifurcated Ribs	10	.13
Fusion of Ribs	8	.11
Poorly Developed Ribs	13	.17
Old Fracture or Spur of Ribs	4	.05
Spinal Curvature, including Potts Dis.	14	.19

The Anti-tuberculosis Society is now making plans for a similar survey sometime during the next school year in the other high schools throughout the state, if such a survey is approved by state and county officials. It is even hoped that a program can be effected which will include the xraying of the junior and senior grades in each high school throughout the state every two years.

DELAWARE ESCAPES A SMALL-POX OUTBREAK

ERNEST F. SMITH, M. D.,*

Dover, Del.

In these days of increased interstate travel the danger of the spread of small-pox is very great. The fact that a non-immune person may be exposed to small-pox, and travel across the country before becoming ill, makes it very necessary that each suspicious case, especially in an adult, be carefully diagnosed. I think the following two cases illustrate this fact very well.

On November 4, 1942, Mrs. A. W. left Fredericksburg, Ohio, with her husband to visit Delaware and Pennsylvania. She arrived at Dover on November 5th, visited fourteen families in the vicinity of Dover between that date and November 10th, when she left Dover for Lancaster, Pennsylvania, arriving there in the evening of the same day.

Between November 10 and November 16, when she first complained of "feeling badly," she visited twenty-four homes, including three church services, besides a funeral, and a department store. From this time on until she left Pennsylvania to return to Ohio, she complained of "feeling badly" but kept on visiting.

During the period November 16 to November 27, when she left Pennsylvania, she visited twenty-one homes, which included two weddings, one funeral, and one wedding supper. She also visited a 5 and 10 cent store.

A letter from Dr. R. H. Markwith, Director of Health of Ohio, dated December 26, 1942, states: "We now have thirteen cases of small-pox in Ohio traceable to Mrs. W."

The Health Department of Delaware was in blissful ignorance of all this until Mrs. W. had returned to Ohio and secondary cases had developed from her.

On Tuesday, December 28, 1942, we received word from the Pennsylvania health authorities that Mrs. K. P. had been found to be suffering from small-pox, and that she had come from Delaware December 24th.

Mrs. P. is of the Amish faith, so we immediately went into the Amish community just west of Dover to ascertain where she had visited. We had little difficulty in finding

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the home which she made her headquarters while here, but great difficulty in finding all the homes she had visited during her stay.

Mrs. P. arrived in Delaware from Mifflin County, Pennsylvania, in the evening of December 17th on her wedding trip. In the course of the next few days we found thirty-two homes she had visited, and vaccinated every person in these families.

Beginning with her visits of December 22 every family she visited told us that she was not feeling well, and had to lie down a while. On December 24th she returned to Pennsylvania and on December 27th was diagnosed as having small-pox.

After a most diligent search, beginning December 28, we could get no history of any illness resembling small-pox following Mrs. W.'s visit, so our conclusion was that Mrs. W. got her infection before leaving Ohio, spent five days of her incubation period in Delaware and then went to Pennsylvania before coming down with the disease.

There had been no cases in the part of Pennsylvania where she visited until after her arrival. In due time secondary cases appeared, including Mrs. P.

COMMENTS

1. Practically all of the thirty-two families visited by Mrs. P. were relatives of hers.
2. She got to visit so many of her folks in a very short time, travelling by "horse and buggy," despite the fact that she was not feeling well.
3. Mrs. P. probably was infected with small-pox at her own wedding, took her wedding trip and returned home after becoming ill.
4. Notwithstanding the fact that Mrs. P. was in close contact with numerous susceptible persons after she was definitely unwell, none of these were infected. Possibly this indicates that small-pox is not very contagious three days before the eruption appears, as we are told by some authorities.
5. Both of these cases came to Delaware from other states, spent a large part of their incubation period here and went on to other states before coming down with small-pox.

6. Each of the thirty-two families was visited every other day until fourteen days had elapsed since their last exposure, and all those exposed after December 19, were quarantined.

HAS GONORRHEA BEEN DRIVEN UNDERGROUND?

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A. R. CAMERON, M. D.,*

Dover, Del.

Despite the efforts of public health authorities to distract the attention of physicians and health officers from the problem of syphilis long enough to arouse some interest in the problem of gonorrhea, little has been accomplished along these lines. Venereal disease clinics in many states do not treat patients with gonorrhea. Where gonorrhea is treated the ratio of syphilis patients to gonorrhea patients is often as high as ten to one.

Syphilis, like an older sister, has always had more glamor than gonorrhea. The younger sister seldom gets the spotlight that it rightfully deserves. There is drama in the story of Ehrlich and arsenic. Intravenous injections have always had an objectiveness that urethral sounds and the multitudinous and assorted remedies for gonorrhea lacked. Even now the sulfa drugs, since they are given orally, command little respect and arouse slight fear in the taking. It behooves the medical profession and the public health authorities to break the siren spell which syphilis has cast over them and to allocate some thought to the problem of gonorrhea control before this infectious and highly communicable disease runs rampant in these times of war hysteria.

Usilton in peace times estimated that more than one million fresh cases of gonorrhea come under medical care each year. This is a conservative estimate. He also stated that at least five hundred thousand cases of gonorrhea were under medical care at all times. These figures, like the public debt of the early thirties, are now ancient history.

Today the United States cannot afford to have even five hundred thousand men and women, during the most productive years of

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their life, idle while they are undergoing treatment or enjoying a protracted convalescence from their duties that varies from weeks to months. The United States needs these man hours and these woman hours for the battle front, for industry, and for the home front.

The question naturally arises: "Where does the man or woman with gonorrhea go for treatment if he or she does not go to the private physician or to the venereal disease clinic?"

The possibilities to be considered are not too numerous. The patient may go to the family physician or the specialist, and receive adequate supervised treatment. Or resort may be had to a venereal disease clinic. Or the patient may remain untreated, subject to the whims of nature and the vicissitudes of natural immunity and susceptibility. Or, and this category is by far the largest, the patient may succumb to the temptation to remain anonymous (and infected) and rely upon the imponderable wisdom and the medical lore of the corner soda clerk or the pseudo-medico posing for the nonce as a pharmacist.

It is the self-treated case and the drug store habitue that deserves most of our consideration. The person who decides to depend upon nature, luck, or unsubstantiated faith, rather than upon men who spend more than one-third of their lives learning to care for the sick, can be reached by only two means. Approach may be made by common sense public health educational methods, or by sound epidemiological investigations based on contact tracing.

The drug store habitue can only be reached by making the drug store an inaccessible haven for his ignorant attempt to bury his head in the sands of avarice and ignorance. No ethical pharmacist now sells sulfa drugs to any customer without the prescription of a reputable physician. There is one sure way to prevent the unethical druggist from profiting at the expense of his honest cousin. The passage of a state law specifically prohibiting the sale of sulfa drugs without a physician's prescription and the implementing of such a law by adequate penalties and means of enforcement would wipe out, almost overnight, the present illicit traffic in sulfa drugs. Until

unethical druggists and quack physicians are forced out of the driver's seat and ethical physicians and pharmacists are again reseated, gonorrhea cannot be controlled.

To truly understand the complexity of the subject of gonorrhea control thought should be given to the mental and emotional reactions that occur in men and women, in boys and girls, who, for the first time, face the realization that they have become afflicted with a disease that their conscience tells them has resulted from an act which is labelled "sinful." At first fear predominates. It is an unreasoning fear that does not permit the weighing of consequences. "Disability" and "death" become vague terms in comparison to "detection" and "discovery." Blind instinct tells them to find someone who can help them without disclosing their anti-social behavior. That is why the corner drugstore with its friendly clerk, and the quack with his enticing anonymity, are so frequently resorted to. Little thought is given to the possibility of a "half cure," of a chronic infection that may light up after marriage, or of an infected marital partner. Youth, in the face of an unknown fear, seeks a temporary rather than a permanent sanctuary.

It becomes then both the duty and the responsibility of physicians and health officers not only to treat gonorrhea but to seek out and to find every early case of the disease. Every sterile mother or father, every case of blindness due to gonorrhea, every sufferer from a gonorrheal complication, presents a challenge to the medical profession to perfect its case-finding methods, its treatment regime, and its diagnostic procedures, so that such failures may not be repeated.

Some members of the medical profession and some health officers have been loath to understand the role of the public health nurse in investigating contacts of venereal disease cases. It is so easy to dismiss the victim of a venereal disease with the trite statement "sin is its own reward," forgetting entirely that the medical profession can only be interested in the curing and the preventing of all preventable diseases. The public health nurse has a medical awareness plus a knowledge of public health consequences that places her in the unique position of being at once the physi-

cians' assistant and the patient's friend. She is a woman, and therefore the logical friend of the sick persons. She has been trained in the rigorous school of medicine to the point where her feminine instincts have been sufficiently subjected to discipline to make her amenable to orders. She can be relied upon by the physicians and the health officer to find the contact with gonorrhea and to follow faithfully all instructions that are given to her. The fact that she is a public servant makes her all the more accessible to the private physician who wishes to unearth and treat patients with diseases that are dangerous to the health of the entire community. She should be the first one to be called upon rather than the last.

Not only the public health nurse but the health officer as well should be consulted frequently by private physicians if an effective fight against gonorrhea is to be waged. The path between the physician's office and the health department is notoriously overgrown with weeds. Many of the legal problems posed by stubborn and uncooperative infectious venereal disease patients can be solved by the health officer and his staff, leaving the actual medical supervision of the case in the hands of the attending physician. The health officer, too, is dependent upon the private physician for assistance. Unless new cases of gonorrhea are promptly reported to the health department there can be no intelligent planning of an anti-gonorrhea campaign. It is not only essential that the health officer know the number of cases of gonorrhea occurring in the community, but he should also be furnished with other pertinent information concerning each case in order to obliterate social conditions that are conducive to the spread of the disease.

At times a professional rivalry develops between private physicians and the health department staff. When carried beyond the professional stage the results are always disastrous to the public. It would be as unprofessional for a physician to spurn the assistance of the health department (or vice versa) because of a personal or professional prejudice as it would be for him to refuse to give diphtheria anti-toxin to a child whose father was of an opposite political faith. Under-

standing and mutual cooperation which permits friendly and constructive criticism can be the means of developing an entente between private physicians and the health department that will greatly accelerate the program for controlling gonorrhea.

In determining how important any infectious disease is in a community two factors must be considered, namely, incidence and morbidity. Although a single case of gonorrhea is undoubtedly less serious than a single case of syphilis, gonorrhea as a community disease assumes greater importance because of its greater incidence. Repeated infections are not unusual with gonorrhea, whereas the syphilitic patient is rarely reinfected. The morbidity and time loss from reinfection with gonorrhea is just as great as that caused by initial attacks. Whether the gonococcus has a greater invasive power than the spirochaeta pallida or whether there exists a greater susceptibility to gonorrhea than to syphilis had not been definitely determined, but the fact remains that many more people contract gonorrhea every year than they do syphilis.

Another obstacle to the full control of gonorrhea is the difficulty in determining when a cure has been effected and whether or not an apparently cured patient has instead become a chronic carrier of the disease. Recently the institution of gonococcal culture services in state health departments has revealed that smears alone disclose a relative few number of cases of gonorrhea in comparison with the number of cases diagnosed after repeated cultures have been made. In the absence of a gonococcal culture service it is wiser to make the diagnosis of gonorrhea clinically, basing judgment on the presence of a purulent urethral or cervical discharge and a positive history of exposure, than to bend over backwards awaiting bacteriological confirmation, meanwhile allowing an infectious gonorrhea patient to spread the disease among his consorts. If gonorrhea is to be controlled every case must be found quickly and treated immediately.

If gonorrhea were an upper respiratory disease or a disease of the digestive tract, in fact anything but a disease contracted through sexual intercourse, headlines would flaunt the failure of the medical profession

and the public health authorities to stop its spread. Its morbidity, the time loss it causes, the expense which treatment entails, the medical services which are absorbed in treating it, all these factors would promote a prompt, energetic, and realistic fight, to the finish against it. Instead, gonorrhea hides behind prudish and emotional prejudice. In hiding, it is at its worst. The time is swiftly coming when no infectious and communicable disease, even a venereal disease, will be permitted to spread practically unmolested through the general population. This time will come the quicker if every physician will enlist in the battle to find gonorrhea, to bring about the investigation of every contact, and to treat every patient until he is no longer infectious.

A sound program for the control of the spread of gonorrhea can only be developed when private physicians, health officers, officers of the law, civic leaders, and the public realize that the price which is exacted annually by gonorrhea is needless, and decide to pool their several abilities in order to drive gonorrhea out into the open and there to destroy it.

THE FOUR P's—THE PUBLIC, POLLUTION, PLANNING, AND POST-WAR RECONSTRUCTION

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Back in 1791 when Alexander Hamilton made his report on the manufacturers, the question of the pollution of our streams was not a very pressing problem, at least from the point of view of those who were attempting to make the new nation a going concern. One of our English friends, however, who happened to be travelling in this country did refer to the highly objectionable character of the harbor of the city of Philadelphia, then a city of about 60,000 population. The problems of stream control are becoming as intricate as any phase of modern government, and this Englishman, undoubtedly, would feel at a loss trying to figure out the solution of the pollution problem in the present city of Philadelphia. On the other hand, the present day Englishman could probably tell us a lot about the control of water sheds, as they have

had many years' experience trying to solve these industrial and domestic waste problems by river-sheds rather than by some general or blanket law passed without any reference to the many varied factors that are bound to enter into the solution of such problems, certainly when you consider an area as varying as these United States.

Past history in this country has indicated that many factors enter into the control of pollution, and one of these is not necessarily whether you have a strong anti-pollution law or not. Many of the states in this country have accomplished as much without drastic laws as those with very severe laws. Many people are discouraged by the progress which is being made by the various states. However, even this slow progress is much better than obeying the clamor of certain groups to pass a Federal law in which certain standards would be set up in a hopeless attempt to solve a many-sided problem. On the other hand, in reviewing the past decade, there is no question but that Federal funds and not laws have given a decided impetus to pollution control. One would venture to predict also that the last has not been heard of this assistance on the part of the Federal government in helping to solve certain problems which affect many people in areas completely removed from the state in which the pollution originates. Unfortunately, fecal matter does not recognize state boundary lines as it travels downstream in a vain attempt to reach some body of water where ample dispersion would be found.

The immensity of the problem of stream pollution can be visualized when we consider that 68,000,000 people in the urban centers of the United States are directly connected with sewers and approximately 40,000,000 people dump sewage without treatment directly into our streams. Seven industrial states account for over twenty-five million of these people. Concentrated effort in these seven states would eliminate over half the pollution problem in these United States.

In addition to the problems noted above, there is also the difficult problem of taking care of the waste from industries which may be located outside of corporate areas but which discharge waste into streams and which

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are detrimental to communities downstream, especially those communities which must take water from the stream for drinking purposes with or without complete treatment.

With the beginnings of the movement to establish Inter-state Commissions on Cooperation by the various states throughout the union, one of the first problems tackled by the four Commissions bordering on the Delaware river was the formation of the Interstate Commission on the Delaware River Basin and which had as its program the control of pollution of this same river. The Delaware River Basin is an area somewhat larger than Belgium and is very densely populated in certain sections. The reduction of pollution of the Delaware river is of concern to the cities within the basin, to the War and Navy Departments, to industry of all types, and finally to the fish and oyster industry. The decided drop in production by the oyster industry of this state within the last few years is a vivid illustration of the need for clean waters, and it is a problem which the legislature has just recently recognized and through a new commission, hopes to revive what was once a very profitable industry.

One of the first problems of the Interstate Commission on the Delaware River Basin was to sell the general idea of a four state cooperative agency to the public and to let the people of the basin know that an administrative agency created by the four states was to act as a continuing body, dealing entirely with problems concerned with the whole basin, not only from the standpoint of pollution, but with other factors such as water supply diversion, recreational needs, and conservation.

The first problem in the basin, insofar as pollution is concerned, was to establish zones for the whole water-shed and this was done by the Committee on Quality in 1938 which was made up of the Chief Engineers of the State Board of Health of the four states of New York, New Jersey, Pennsylvania and Delaware. The Delaware River, from the headwaters to the Delaware Bay, is divided into four zones and certain standards were set up for each zone. Naturally the zones closest to the headwaters were to be kept as pure as possible and any one who has motored on

Pennsylvania Highway No. 611 which winds through the Delaware Water Gap will agree that such a stream should be kept as clean as it has been for hundreds of years. As we come further downstream other problems arise, especially when we encounter large municipalities such as Trenton, Camden, Philadelphia, and Wilmington.

The several zones may be described briefly as follows: Zone No. 1 extends from the headwaters of the Delaware down to Trenton, New Jersey, and the chief uses of the river are to be for recreation, bathing and fish life. Zone No. 2 extends from Trenton to a line drawn perpendicular to Pennypacker Creek in Philadelphia and to a comparable point in New Jersey, and is to be restored to condition where the water after treatment could be used for drinking purposes by the inhabitants of that section of the river, and also for recreation, navigation and fishing. Zone No. 3 extends from Pennypacker Creek to the Pennsylvania-Delaware boundary line and is to be restored to that condition where the water would serve for industrial water supplies, navigation and other uses. Zone No. 4 extends from the Pennsylvania-Delaware boundary line to the Atlantic Ocean. A portion of this is to be used for industrial water supplies and the remainder for commercial fishing, fish and oyster culture, and other uses.

Detailed minimum standards of purity for effluents of sewage treatment plants to be discharged into these various zones were also set up. The same standards in each zone apply to the tributaries as well as to the main river. This latter was done to enable the uniform correction of pollution in the whole water shed. The standards of purity and the time schedule set for the completion of the sewage treatment plants in the various towns located on the water shed have been adopted by three of the four states as a reciprocal agreement. Pennsylvania is the one state which has not agreed to the proposed standards and time schedule.

The amount of sewage being discharged into the Delaware River is estimated to be approximately one-half billion gallons daily. This estimate includes industrial and domestic

wastes, and approximately two-thirds of all the wastes, both industrial and municipal, is discharged untreated into the river. Pennsylvania contributes approximately 75%, New Jersey about 20% and New York and Delaware combined 5%. One does not have to scrutinize the basin very thoroughly before he knows immediately where the real work must be done to make a real showing in the attempt to clean up the Delaware river. This is the area which includes Camden, Philadelphia, Chester and Wilmington. Of this group Chester is the only municipality that has installed primary treatment and has kept to the schedule set up by the several states. Incidentally, the suburban territory surrounding Chester has also constructed intercepting sewers and treatment plants. Whether the fact that the Chairman of the Commission lives in Chester has been the main reason why this area has gone ahead one cannot say, but the members of the Commission take it as a tribute to the Chairman.

One of the other problems facing the people in the water-shed is the extent to which water is being diverted from the Delaware River Basin. The Commission has given considerable thought to this problem and it is a problem that will become more acute as the years go by.

At the present time the city of New York is appropriating 450,000,000 gallons daily from the Delaware and its tributaries and this same water is being taken from this watershed and discharged into the Atlantic Ocean. The city of Newark is now negotiating for 400,000,000 gallons which would further deplete the fresh water in the Delaware. What has this to do with the communities downstream? The seriousness of the problem is due to the fact that the salt water is reaching farther up stream, to such an extent that industries in and around Chester are noticing the rise in the salt content of the water and consequently are now faced with the prospect of having to go to inland sources to impound fresh water for industrial purposes. To date no one has evolved a satisfactory method of removing salt from water, at least economically.

Another important factor is that the further this salt invasion moves northward up-

stream the greater the chances are that the underground water stratum will be affected. This stratum is tapped by wells which in turn are the sole source of drinking water supplies for Delaware and New Jersey communities. In the case of the city of New Castle the salt content has risen from approximately 40 ppm to 1400 ppm within the last few years. A part of this increase may be due to a combination of factors but the extensive report made on the "Salinity Invasion of the Delaware River" by the War Department would tend to corroborate the viewpoint that the diversion of fresh water from the Delaware River Basin is an extremely important factor.

The Commission has devoted most of its efforts to encouraging the communities along the basin to take advantage of the Federal funds in the construction of intercepting sewers and sewage treatment plants. Up until the priority situation interfered with the construction of sewage plants some \$10,000,000 have been spent by the various municipalities of this area, and the sewage of some 200,000 people taken care of. In addition, the city of Philadelphia was just about to embark upon the construction of a \$42,000,000 sewage collection and treatment program. The city of Camden and the city of Gloucester, just across from Philadelphia, were under orders to construct plants for the treatment of their wastes. According to the time schedule set up and agreed to by three states Gloucester was to have constructed its sewage treatment plant by January 1, 1940, Camden 80% completion by January 1, 1943, and the same for Philadelphia. Various factors have interfered with this program and as far as certain cities are concerned they have fallen behind the time schedule.

The background given above brings us down to the relationship of the state of Delaware to this program. The municipalities in Zone No. 4 which were listed in the time schedule consist of four in Delaware and one in New Jersey, namely, Salem, which was to construct a primary treatment plant by January 1, 1940; Wilmington by January 1, 1943, and New Castle, Bellefonte and Delaware City by January, 1945.

It is important that these towns and cities, particularly Wilmington, draw the necessary

plans for the installation of the interceptor sewers and to begin to select sites for the pumping stations and sewage treatment plants and to iron out the legal difficulties inherent in such a program. Many communities throughout the United States are using this opportunity to get plans and proposals ready so that they will be ready to go ahead when the public works programs are resumed.

At the present time all the sewage of the city of Wilmington, with the exception of sewage of some 5,000 people which is now taken care of in the Shellpot Creek plant, is discharged untreated into the Brandywine Creek and Christiana River.

Forehandedness in preparing for a future public works program would not be regretted by the municipal authorities of New Castle, Bellefonte and Delaware City. The problem of Bellefonte would probably be tied in with certain other communities adjacent to and bordering on the Delaware River. This should be a joint problem of the town of Bellefonte and the Levy Court of New Castle County.

Glancing over the costs of the sewage treatment plants, interceptor sewers and pumping stations of the many communities on either side of the Delaware River which within the last five or six years have constructed sewage treatment plants it is interesting to compare these costs with the expenditures now made for certain pieces of war equipment. The cost of one-fifth of a submarine would collect all of the sewage from the city of Wilmington and provide pumping stations and primary treatment. The cost of one pursuit plane would provide an ample sewage treatment plant for the town of New Castle and the cost of one 60-ton tank would solve the problems of both Delaware City and Bellefonte.

As we move out of the immediate shores of the Delaware River we come to other sanitation problems which pertain to our local unincorporated areas as well as the incorporated areas. Coincident with the construction of sewage treatment plants by towns such as New Castle and Delaware City, as well as Wilmington, would be that of Newport which contributes untreated sewage directly to the Christiana river. Other projects crying for

a solution and on a much larger scale than heretofore considered by authorities in question are the provisions of sewers for the areas immediately adjacent to the northern boundary line of Wilmington and thence northward to the state boundary line. South of Wilmington a comprehensive sewerage plan for some of the ill-advised real estate developments should be considered. The areas to be considered are the Wilmington Manor section, Minquadales, Rose Hill, and surrounding territory. Such improvements should not be made without the county authorities taking the initiative in seeking low cost capital funds so that these improvements can be carried over a period of years and as the whole area develops each new development will help to carry its share of the burden. As the Federal government has helped to alleviate certain problems which have both Federal and states interests, the county should also consider assisting those areas which are too dispersed to be considered as civil units by themselves. Scores of counties are doing this same work throughout the United States and some of the largest projects constructed during the last decade were done by these same groups. With the cleaning up of certain of the streams through an expanded public works program the time arrives for industry to give consideration to the treatment of its wastes, and this applies particularly to the tributaries of the Christiana as well as other streams throughout the state.

As we come down the state we find other communities where the sewage is still discharged raw into the most convenient water course. The towns which should now be considering taking wastes out of streams and should be preparing the necessary plans to be in readiness for a public works program are Seaford, Laurel and Lewes. Such treatment plants would consist of primary treatment tanks which would settle out the heavier solids, with the overflows or effluents chlorinated before discharge into the streams. The towns and cities that might be considering secondary treatment, and particularly to assist further in the cleaning up of certain streams which effect oyster culturing, are the cities of Dover and Milford.

The towns that have considered sewerage

systems where none exist at the present time are Milton and Millsboro, the former having prepared preliminary plans. Frankford and Selbyville are also communities that might be giving consideration to the preparation of preliminary plans for a complete sewerage system. In addition to the areas suggested above, many of the communities need to consider the extension of sewers to reach areas which do not now have the benefit of modern sanitation. By the time a concerted effort is made to re-establish a public works program three to five years will have passed and the need for servicing these new areas will become all the more evident.

Many of the communities throughout the state could consider further conditioning of their water supplies through such methods as water softening, the removal of iron or the removal of carbon dioxide and its correction with lime treatment. Some of the towns and cities which might consider water softening are: Dover, hardness 127 ppm; Georgetown, 149 ppm; Lewes, 119 ppm; and Townsend, 198 ppm. Cities that have a high iron content and would be greatly improved by the installation of an iron removal plant are: Bridgeville, iron content 3.7 ppm; Delaware City, 7.4 ppm; Delmar, 3.2 ppm; Frederica, 3.4 ppm; Laurel, 3.4 ppm; Lewes, 6.9 ppm; New Castle, 4.4 ppm; Seaford, 3.9 ppm; Townsend, 6.4 ppm; and in addition the area comprising Richardson Park, supplied by the Artesian Water Company, is also in need of iron removal. Many of our supplies have a high acidity due to the carbon dioxide gas present. This can be removed by aeration and correction with lime. The towns having supplies with high carbon dioxide content are: Delaware City, 71 ppm; Smyrna, 39 ppm; Clayton, 24 ppm; Harrington, 47 ppm; Bridgeville, 20 ppm; Seaford, 46 ppm; Delmar, 48 ppm; Laurel, 34 ppm; Millsboro, 16 ppm; Camden-Wyoming, 24 ppm; Milton, 26 ppm; Lewes, 50 ppm.

Today we can demonstrate that hard waters consume a disproportionate amount of costly soaps, that waters high in iron discolor and shorten the life of clothes, and that waters high in carbon dioxide cost money in terms of plumbers' bills as well as a disintegration of the whole plumbing system. Today more

and more people are demanding that water supplies keep pace with other modern improvements. A satisfactory water supply shall be clear, colorless, odorless, with an iron not exceeding 0.3 ppm and a carbon dioxide content of not over 10 ppm.

An attempt has been made in this survey of sanitary requirements to indicate the need for such improvements and further to stress the need to be prepared to take part in the huge problem of demobilization. Today one senses that all the major groups of opinions are convinced that not only industry but that municipalities, counties, states, and the Federal government must necessarily join in planning to take cognizance of the problem created by changing over to peace time pursuits twenty million men and women who have heretofore been actively engaged in supplying eight to ten million other men and women throughout this world with the necessities of war. Just as the magnificent bomber of today has permitted man to see the whole world from a different plane so today must men and statesmen look at today's problems from a vantage point far removed from that even of the last post-war period. Log cabin thinking necessarily must be air-conditioned to struggle with the problems created by the magnificent efforts made by industry which has accomplished an unbelievable achievement in the short space of two or three years. During this time a great majority of these industries have completely retooled their plants and have turned out such a supply of products for the purpose of overwhelming the Axis powers that even yet the average American has not visualized this tremendous increase in the tempo of modern industry, despite the tools of the motion picture and the radio. That each civil division, in addition to industry, must do its duty to re-employ the men who are returning from the armed forces and from the factories is not the opinion today of one group but of practically all groups throughout the English-speaking world. War, despite all of its horrors, has caused technological development to burst forth full bloom in the short space of a few years and has placed in our laps problems which even the staunchest of our founding fathers might well have recoiled from.

One of the basic problems, as I see it, is to raise the mental horizon of our citizenry to a point where they can visualize a physical environment to match the incomparable beauty of the bomber soaring through the atmosphere. Sanitarians must prepare to help in the educational work necessary in the movement to clean up our valleys, our rural communities, and our cities. This means satisfactory water supplies, the proper treatment of municipal wastes and other population groups, and the proper housing of all citizens. It is going to cost, it is going to hurt, but a nation which can underwrite in three or four years a comparatively new method of transportation such as the airplane when that same nation took nearly two generations to underwrite a former method of transportation can, I believe, wipe out the ugliness of portions of our cities, the bareness of our countrysides and all those aspects of our physical environment that do not match the civilization which the grace of the bomber and its brother portends. The swiftness of the plane is perhaps the harbinger of the speed of the economic collapse which we face unless we think quickly and broadly enough about those problems. Solving these we can call ourselves citizens of that world those nineteen and twenty-year-old boys are seeing from the clouds as they fight our battles for us. Let us, therefore, so plan our post-war reconstruction problems that man will not be tempted to solve these by the use of the magnificent planes which are daily bringing these very problems closer to your door-step and mine. Let all of us get ready for the impending shock from the smallest crossroads and the smallest business unit to the largest civil and industrial units in our state and nation.

THE SEASONAL INCIDENCE OF BIRTHS

Cecil A. Marshall, B. S.,*

Dover, Del.

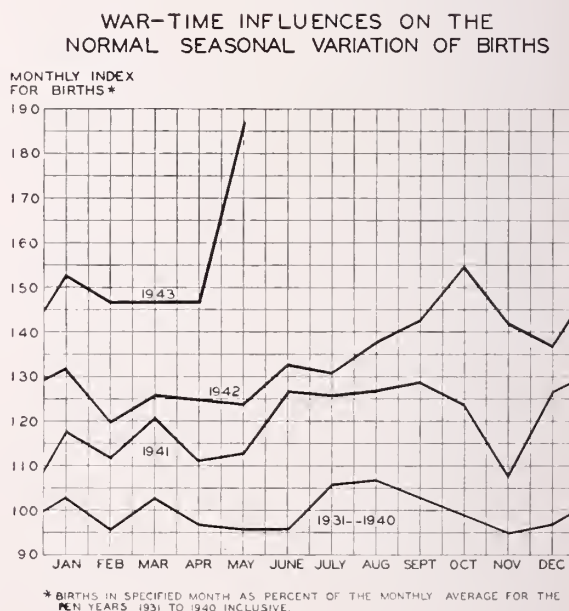
Conditions of extensive employment coupled with future uncertainty for a great number of people, universally prevalent during these times, has produced social tendencies which practically go unharnessed from peace time influences. The order of the day, in part, is a state of mind as a result of war time

influences, which, no doubt, is nowhere more in evidence than at marriage bureaus. People are now marrying and some establishing families, in a great number of instances under conditions not even remotely contemplated during peace-time days.

In Delaware, which is an adequate sample of national tendencies, we find that the marriage rate has gone from an annual rate of 6.0 per 1,000 population in 1938 to 30.0 per 1,000 at the present time.

In figures there has been an increase from 1,586 marriages in Delaware in 1938 to a contemplated 8,000 in 1943. This increase is beneficially reflected in the birth rate as would be expected, and is resulting in an increase of Delaware civilian population, considering the losses sustained from men leaving for the armed services.

For the month of May, 1943, the latest month for which complete figures are available, Delaware had more births than any month during which records are on file in the Division of Vital Statistics. The increase for this month is very pronounced as can be observed from the following chart. For the



current year a conservative prediction may be that the peak of births will be reached some time this fall. It is expected to be over and above anything that we have heretofore ex-

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perienced. The lower curve is based on ten years experience of baby records and it is a very accurate picture of the seasonal trend. During normal years there is a minor peak in March with a major increase during the months of July, August and September, the peak month being August. This curve very closely coincides with the annual curve of the United States, where from two to two-and-a-half million births are involved. For the years 1941, 1942 and 1943, where a decided increase from the norm is noted, we can still see some adherence to the seasonal trend; however, the bulge of increase in the fall of these years is spread over a greater span of time. The trends here noted are twofold—one the constant increase, the other the seasonal incidence.

In connection with the seasonal cycle of births we may well be fortunate in its mode of operation. The seasonal peak of summer is the best time for babies to be born as well as being the time when most babies are born.

When rates are computed from the tables of selected causes of infant mortality from the Federal Report of Vital Statistics, 1940, the latest year for which figures are available, we find for the quarter of the year, July, August and September, the infant mortality is the lowest of any quarter; it is 20% lower than the first or last quarters of the year and approximately 10% lower than the spring quarter. This is in part, no doubt, due to the trying effects of adverse weather on the pregnant mother, as rates from prenatal cases are found to be highest during the winter months. The causes here referred to are premature births, congenital malformations, and congenital debility. The highest rates for congenital malformations are during the period November on through March.

The situation in regard to gastrointestinal diseases is somewhat different, as the rates for these are highest during the warm months. Considering this group alone, October and November would be better months for birth of babies who would then have some time with which to develop bodily resistance for the following summer. Of this group of diseases, diarrhea and enteritis is the most important; however, this cause has become one of the lesser hazards to the modern infant.

The very important diseases for the winter baby to avoid are those of the respiratory group, namely, pneumonia and influenza, the mortality rates from which are during the cold season approximately three times as great as during the other months of the year.

The national curve of infant mortality, exclusive of stillbirths, runs to its lowest point during the month of August, the month when most babies are born.

The monthly incidence of death from stillbirth causes also is shown somewhat to be higher during winter and spring than during the summer and fall months, although the difference here indicated is not too pronounced.

We find from a study of mortality from selected causes that the infant who begins his life during the time when most of them do has a better chance to weather the hazards of survival; first, because during that time the forces involved in producing mortality from prenatal causes are least active, as well as those of the respiratory group of diseases—the two groups that dominate the infant mortality picture; second, because those born during these months have more time to develop constitutional resistance for combating the dangers to early infancy.

MATERNITY AND INFANT CARE FOR WIVES AND INFANTS OF ENLISTED MEN IN THE ARMED FORCES

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Congress has appropriated funds to pay for the costs of the maternity care for wives of enlisted men and for sick care for their infants under one year. The U. S. Children's Bureau has been asked to supervise the program as administered by the Maternal and Child Health Divisions of the State Health Departments. As of August 1, 1943, forty-two states, including the state of Delaware, were participating in the plan and two additional states had completed their tentative plans and submitted them to the Children's Bureau for approval. The plans in all the states are similar as they are all designed to follow a basic pattern supplied by the U. S. Children's Bureau. This is necessary because

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the plan is nation-wide in scope and no one state should receive greater concessions than any other.

WHO IS ELIGIBLE?

The plan was designed to assist the families of enlisted men whose basic pay was \$78.00 a month or less (men in the fourth to seventh grades) or the families of enlisted men in the first three grades where circumstances make it difficult for sufficient funds to be collected to pay for such care without causing the family some hardship. This latter group must attach a signed statement of need to the application form.

Although many of the enlisted men may have had good salaries prior to entering the Army, Navy, Coast Guard or Marines, most of them were not old enough and working long enough to have accumulated much money and many are attempting to continue small life insurance or building and loan payments so that they will not have to sacrifice the funds they have invested. Others find this impossible.

The emergency plan in time of need is small recompense for the sacrifices the men and their families are making, but it has helped ease the anxiety of many a man who was separated from his wife and many a woman who had to go through pregnancy and childbirth or the serious illness of her child without the consolation of her husband's presence.

Since common-law marriage is not recognized in Delaware, only women who are legally married to enlisted men are eligible for maternity care. However, illegitimate children are eligible for care provided the father signs a statement acknowledging paternity.

HOW TO APPLY

Physicians may obtain application forms for maternity care and for sick infant care from any one of the County Health Units or from the MCH Division of the State Board of Health in Dover. They are also available at American Red Cross Chapters, U. S. O.'s, Army posts, coast guard stations, welfare agencies, and hospitals.

The wife fills out the face of the application including the husband's serial number; the physician fills out the reverse side. In so

doing he agrees not to request or accept any payment from the patient or her family for these services. In other words, the fees paid by the State Board of Health cannot be used as part payment toward a larger fee but must constitute the entire fee. If this were not so, the whole purpose of the plan would be frustrated. If patients have sufficient money to pay for expensive obstetrical care they do not need the assistance of the emergency plan. The same applies to hospital care.

If the physician is unwilling to deliver a patient for the fee provided by the plan, (i. e., \$10.00 for prenatal care—a minimum of five visits, and \$25.00 for delivery, postpartum care and six weeks' postpartum examination) there can be no other services authorized under the plan. When a physician does not wish to participate in the plan but believes the patient should receive the benefits of the plan he can either refer the patient to another physician who is participating or to a participating hospital where she can receive prenatal care and be delivered by a member of the resident staff.

In special cases Army Emergency Relief or Navy Relief may give some assistance when patients are not eligible for care under the Emergency Plan. To avoid duplication of effort and to be sure all patients are receiving all the care necessary, a clearing house for the reporting of all patients receiving this type of care has been established in Delaware.

Since authorization for payment for care cannot be retroactive beyond 24 hours for maternity patients and 5 to 6 days for sick infants, it is very important that applications be sent in promptly. All care prior to that time will have to be paid for by the patient or donated by the physician. This ruling, while it may cause some hardship before the plan is well understood, will cause no difficulty at all when physicians and hospital admitting rooms routinely ask each maternity patient whether she is eligible for care and fill out and mail applications promptly. This has an added advantage to both the physician and the hospital, long before the patient leaves the hospital they know whether payment for care has been authorized.

WHAT SERVICES ARE AVAILABLE TO THE PATIENT

The emergency plan provides prenatal care by the physician of choice; antepartum nursing instruction by State Board of Health nurses; delivery, postpartum care and six weeks' postpartum examination by the physician of choice; hospitalization; or if a home delivery, delivery nursing service and daily postpartum bedside nursing visits as long as the patient remains in bed at home, up to the fourteenth day. (For a description of the nursing service, see Miss Alberta Wilson's paper in this issue.) Complications of the prenatal period and for six weeks' postpartum are also cared for under the plan.

For sick infants under one year, physician's home or office visits are authorized and hospitalization for a maximum period of three weeks when necessary. When additional care is necessary a second application should be sent to the State Board of Health explaining the need for additional services.

Health supervision for the infants is supplied in the Well Child Conferences of the State Board of Health.

HOW PAYMENTS ARE MADE

Physician's Invoice forms are supplied upon which the physician states the services rendered. This invoice must be accompanied by an Emergency Plan medical record form giving data upon all the services for which the physician is to be paid—i. e. if the application was made too late for payment for prenatal care, this portion of the record need not be filled out. The delivery fee includes the six weeks' postpartum examination and this examination must be completed before the invoice is sent in. When the delivery is performed by a member of the resident staff of a hospital, he fills out a medical record form which is to be included with the hospital invoice form.

Occasionally women who have had care authorized in Delaware move to another state. When this occurs, if the physician will send a record of the services he rendered between the time care was authorized and the patient departed, he will be reimbursed for these ser-

vices at the rate of \$4.00 for the initial visit which includes the physical examination and pelvic measurements, and \$1.50 a visit for the follow-up visits.

This same rate is used in paying for prenatal visits when the patient has come to the physician too late for five prenatal visits at least a week apart or when the application has been made too late in pregnancy for other reasons.

DATA ON THE PLAN IN DELAWARE

The Delaware Emergency Plan was approved by the U. S. Children's Bureau April 29, 1943. Notices were sent to all physicians by May 10, 1943. During the remaining days in May, 34 authorizations for care were made; in June, 80 authorizations; in July, 74; and for the first ten days in August, 12; or a total of 200 authorizations in three months.

58 physicians have participated in the plan to date, and 5 of the 7 hospitals in the state. Another of the hospitals is planning to participate soon.

Of the 200 authorizations, 194 were for maternity care and 6 for the care of sick infants. 130 of the women for whom care was authorized were Delawareans whose husbands were in camps in this country, 23 had husbands overseas, 41 authorizations were for women who had come to Delaware to be with their husbands who were stationed here.

In 1942 there were 5,472 births in the state, including 254 non-resident births. During 1943 the number will probably be at least 500 births a month if the present rate of births continues.

It has been estimated that for the country as a whole 5% of the births would be in the group eligible for emergency care. Using this rate in Delaware the number would be approximately 300. It appears that this estimate will be quite low for Delaware since we have made 194 authorizations for maternity care in the first three months' period.

Some indication of the magnitude of this program can be obtained from the federal report as of June 30, 1943. A total of 28,005 authorizations for care had been made throughout the country up to that date; one state health department authorizing care for as many as 1,106 patients a month.

THE ROLE OF HEALTH EDUCATION IN A PUBLIC HEALTH PROGRAM

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Dover, Del.

A health education program in wartime should, first of all, inspire the state's citizens with a desire to keep well, and second, give them ideas on how to do it and how to cooperate with doctors and other agencies striving for the same goal. It should lead the way in forming public opinion which will back up the health programs now being carried on in the state, whether it be the State Board of Health's own work or that of other groups like the state's Safety Council, Anti-tuberculosis Society, Women's Field Army for the Control of Cancer, and others.

The public health department knows the health problems of a community, the health facts and the health resources and is, therefore, in a position to make a fundamental contribution to any health education program.

Health officers throughout the country are presenting their health education programs to the people by the means of a sympathetic press, helpful radio, exhibits, and window displays, as well as through clinics and nursing services. They realize that an intelligent, well-informed public is more sympathetic toward, and cooperative with, activities which contribute to more healthful community living.

One function of a Division of Public Health Information is to aid and promote both national and state movements already begun such as: canning for school lunch programs, for better nutrition and to save the foodstuffs; safety for school children; tuberculosis and cancer control by means of early diagnosis; recruitment of high school and college girls for nursing careers; use of schools as recreation centers for youth; health projects for club women, National Negro Health Week; and other programs that directly, or indirectly, affect the health of the state.

What can be done in an intensified campaign of health education has been demonstrated by the public's response to vaccination for smallpox and immunization against diph-

theria, which are now becoming accepted health measures and a part of school routine.

Hot lunches for school children is another health program which has received impetus through public health education. These lunches are being served in many schools, often through community cooperation.

The State Board of Health stands today as the one agency in Delaware trying to do a wholesale job in many fields of health education. Advice of physicians to their patients, of health teaching in the schools, education by special organizations on specific disease or on safety—each of these is working with a particular group or on a specific health or safety problem in the state. But this is not enough.

LESS DOCTORS—MORE HEALTH EDUCATION NEEDS

It is taken for granted that, as the war progresses, more and more doctors and nurses will be required to serve with the armed forces, placing an increasingly heavy burden upon the physicians and nurses left at home to care for the civilian population. The Bureau of the Census estimates 275,478 persons as Delaware's population for 1942, and men and women from other states continue to pour into the industrial areas here. About 216 licensed physicians are left in the state, or an average of one doctor to over 1,200 people. In some rural areas there are even fewer than the state average. The Army* has asked for an additional 10,000 doctors in this country to enter war service by New Year's Day. A hundred more nurses from Delaware are requested this year by the Army and Navy before the end of this year to fill the state's quota for 1943.

Babies will continue to arrive, accidents and disease to occur.

Is the burden to become too heavy to be borne by the physicians left in Delaware?

Are the people to suffer because there are not enough doctors to care for their ills?

Colleges and hospitals cannot turn out new personnel fast enough to cover all the medical and nursing needs of the state adequately, and the same problem is acute all over the country.

What, then, is the answer?

One at least partial reply is preventive medicine by means of health education. If

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people—from school children to grandparents—can be trained to think of their own individual health and safety as a direct and positive contribution to the war effort, there will be less of the avoidable illnesses and accidents, thus giving doctors and nurses more time to devote to maternity patients, infants, and the serious cases of disease and accidents.

HEALTH NO LONGER INDIVIDUAL MATTER

Heretofore health has been an individual matter. Now, if people can be made to feel that by keeping well they are making a direct contribution to the war effort, and, equally, that by being careless of their health or safety they slow up the war effort—then we should have a really powerful motive for the individual to preserve his own well-being. Certainly it is a stronger incentive than the pre-war one of health for health's sake of the individual—which seldom appealed to children and often was equally unimpressive to their elders.

A program of aiding "Victory Through Health," carried on in the schools and other public places, might well serve to awaken Delawareans to an interest in all phases of their health, from physical check-ups to eating the right foods.

"Have a Physical Check-up on Your Birthday" is an idea that could be advocated in this state with good results. It would help people to have early diagnosis and treatment of such diseases as tuberculosis, cancer, heart disease, and syphilis before their condition became serious, should their family physician find that they had any one of these, or other ailments.

Both doctors and public health personnel have long talked about early treatment leading to early cure, or at least to the arresting of many diseases, but far too many people must be slowed up or incapacitated before they will seek their doctor's advice. This means, of course, that not only are they a loss to war production or other useful labor at a time when man and woman power is so sorely needed, but that they require more of the practicing physician's and nurse's time trying to rehabilitate them than would have been needed for early treatment.

Doctors in good standing do not, of course,

advertise but the State Board of Health can, through newspaper stories and posters, working in schools and in organized groups, do health education work to popularize such ideas as "Victory Through Health," the importance of KEEPING well, and "Have a Physical Check-up For Your Birthday." Suggesting a physical examination on the person's birthday by the family doctor would serve the three-fold purpose of urging him to do the job on a specific date rather than just giving him a vague admonition; it would stagger the check-ups through the year so that the physicians would not be overwhelmed with examinations at any one time; and it would lead to the much-to-be-desired early diagnosis and treatment.

The Delaware Academy of Medicine in Wilmington made a step in the direction of general public health education last spring when it held two forums open to the public, where medical matters were discussed and where lay people could ask questions of a panel of physicians. These forums, it was announced, would continue this fall. They have proved successful in other cities and furnish a rare opportunity for the public to obtain the latest medical thought on many subjects.

But busy doctors these days have little time for general health teaching, so, both to save their precious hours and skills for the seriously ill, and to help keep well people well, the Division of Public Health Information of the State Board of Health advises the public on health matters of seasonal importance from sunburn to colds, from watching out for ticks since they may be the carriers of Rocky Mountain spotted fever, to diarrhea being dangerous to babies, and that pneumonia is a medical emergency. Always the State Board of Health urges persons to seek the aid of their family physician at the beginning of any illness.

MOTION PICTURES AS A TEACHING MEDIUM

Motion pictures are now gaining popularity as a means of health education. Their increasing importance is shown by the fact that the Rockefeller Foundation appropriated funds to the American Film Center in New York City for a three-year period for research

in the types of films now being used for teaching purposes in medicine and in public health and for recommendations on improvements and other types of such films as are needed. The evaluation work is now being carried on at the Center and suggestions are being made as to the type of films needed in these fields.

Films are now being used in Delaware to teach about tuberculosis, nutrition, home nursing, first aid, venereal disease, and dental hygiene. Frequently it is found that, for health education purposes, motion pictures have a greater appeal than does a speaker.

THE SCHOOL AND HEALTH EDUCATION

The school is a valuable avenue to the home in matters of health education. A child's mind accepts new ideas readily and the enlistment of trained educators in support of a health department's objective may convince the child and often, through him, the parents.

It is natural to expect that two such agencies serving all the people—the schools and the health department—should furnish leadership in health education by providing sound health education programs.

MOTHERS AND BABIES

Well Child Conferences, as the name implies, are to help mothers keep their babies and pre-school age children well. Valuable health and nutrition advice and teaching may be offered in these clinics.

VENEREAL DISEASE

Venereal disease is another field where health education may enlist the support of the public in cutting down organized prostitution and other conditions leading to the spread of syphilis and gonorrhea. Too long has there been a "hush-hush" attitude on the part of the public about this subject. The problem will not be put adequately under control until police, politicians, and the general population are squarely behind it.

The public too often assumes that venereal disease is something "that cannot happen here." Many people who have syphilis do not know that they are infected, that a blood test will reveal the presence of the disease, or that treatment will arrest the trouble and render them non-infectious. Public health education as to the extent of the venereal disease problem and the illness and tragedy that follow in its wake are very necessary if a cam-

paign to stamp out syphilis is to be successful.

Every field of the public health program can be made more effective by the use of adequate health education through one medium or several. It is hoped that preventive medicine through health education will aid toward "health on the home front" in Delaware.

NURSING SERVICES AVAILABLE THROUGH THE STATE BOARD OF HEALTH

ALBERTA B. WILSON, R. N., M. S.,*

Dover, Del.

Where there is no local visiting nurse organization, such as we have in Wilmington or Newark, the State Board of Health nurses give *bedside care* in any type of illness for the purpose of teaching some responsible person in the home. The Red Cross Home Nursing courses have reached many homes and frequently it is possible to find a member of a family or a neighbor who is able to care for the sick person properly with only some help from the nurse. Recently, a doctor referred a young woman with cancer. She had two small children and the father, trying to work, care for two children and a sick wife, was desperate. The Board of Health nurse gave the woman care and taught a relative who came to stay with the family. Later it was necessary to have a practical nurse. The Board of Health nurse and the doctor worked together on this and through funds provided by the local cancer society, a practical nurse was secured. In several weeks, the disease reached a terminal stage and hospital care for this patient became necessary. This is a splendid example of doctor and community nurse working together with agencies available in the area, to meet the needs of individuals in the community.

Antepartum Care: General instructions in the hygiene of pregnancy by the public health nurse has long been a service of the Board of Health. "Medical care early in pregnancy and periodic medical care as designated by the physician," are probably the words most frequently spoken by every public health nurse. The nurse calls the physician for orders, and to find out how much he wishes her to do. Recent services added to the general

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visit made to teach the hygiene of pregnancy are taking of blood pressure and collection of urine specimens. These services are rendered only by order of the attending physician.

Home Delivery Nursing Care: In a small area of Sussex County, from Georgetown to Frankford, the Board of Health has made arrangements to provide home delivery nursing services to patients otherwise unable to secure such services, for those physicians requesting it for their patients. This was done after a study revealed that the most home deliveries occurred in this area. Inactive nurses in the area are prepared to answer the doctors call. Subsequent visits for postpartum and newborn care are made by the Board of Health nurses. All over the state a similar arrangement is in effect for patients eligible for the Emergency Plan for Soldiers Wives. A roster of inactive nurses throughout the state has been set up so that when the physician calls for local Health Unit the nurse living nearest the patient can be contacted. Postpartum and newborn nursing care in the home is also included during the fourteen days after delivery.

Postpartum and Newborn Care: Hospitals outside Wilmington have been notified that the Board of Health nurses will provide nursing care to those patients discharged from the hospital before the usual time. This service was offered when hospitals, because of lack of space, began discharging patients as early as the fifth postpartum day.

As birth notices come in, the nurses call physicians to offer services as bedside care, formula demonstration, and baby bath demonstration. Many mothers with their first baby and women delivered at home find these services particularly helpful. The nurse may visit in the home weekly to assist in health supervision of the mother until she has had her six weeks postpartum examination and until the baby is off to a good start. The sixth week visit to the physician for postpartum examination is emphasized as a part of the health supervision of every mother.

Infant and Preschool Health Supervision: Nurses have been instructed in dietary needs of the average normal child at various age levels and carry diet instruction sheets. These diet instruction sheets are distributed to pri-

vate physicians' patients only with the recommendations of the physician. Nurses will make periodic visits, and refer the child to the physician in accordance with his instructions or when any deviation from the normal is noted.

Veneral Disease Follow-up: Many patients are referred to private physicians as a part of the public health nursing program in case finding. The public health nurse can help the physician with ease holding, too, if he will refer those patients who lapse treatment. She can visit the patient and interpret to him the need for treatment. The patient's confidence is preserved in every instance. This procedure has been very satisfactory in many cities among a goodly number of physicians.

Tuberculosis Nursing: While patients are confined to bed at home, awaiting admission to a sanatorium or having refused sanatorium care, the public health nurse can be of invaluable help. She can also help the patient newly discharged from the sanatorium. Bedside nursing and general instructions regarding diet, routine, isolation, and disposal of sputum are all part of the nurses' teachings. She can help the patient and his family to a better understanding of the disease, and give the patient security and confidence by seeing his point of view about the changes he is forced to make. She can help the family in their necessary adaptation to the needs of the patient.

Communicable Disease Nursing: In any kind of communicable disease, the public health nurse will give general health instructions and teach a member of the family to give bedside care and proper care of the mouth. She will demonstrate methods of isolation, and concurrent and terminal disinfection. Further care by the family will be supervised by the nurse and given as needed.

To meet the medical care crisis, planned efforts have been and are being instituted to assist physicians to conserve their time and strength for the most necessary services and for services which only they can give. Public health nurses can supplement the services of physicians at certain times in certain ways in order to make the most of local health resources remaining for the civilian population.

Summary of nursing services available through the Delaware State Board of Health.

1. Bedside care for all types of illness, acute or chronic.
2. Antepartum health supervision.
3. Home delivery service for (1) those eligible for the "Emergency Plan for Maternity Care to Soldiers' Wives," and (2) in a small area of Sussex County (Georgetown to Frankford).
4. Postpartum and newborn nursing care.
5. Infant and preschool health supervision.
6. Venereal disease follow-up of lapsed cases.
7. Nursing care and instruction for tuberculosis patients and their contacts.
8. Nursing care and instruction for patients with all types of communicable disease.

THE PHYSICIAN'S ROLE DURING FOOD SHORTAGES

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It is common knowledge these days that doctors' offices are so crowded it is most difficult to get an appointment, and even then one must resign oneself to a long wait. Physicians are influential members of the community; they have earned the respect and confidence of the people by a long record of public service. Logically, they were among the first to be called at the beginning of this war and characteristically, their response was instantaneous and generous, though it meant that those left at home would have greatly increased responsibilities.

In times of national emergency all people are called on to apply their particular skills to the benefit of the nation. So it is that now, notwithstanding increased responsibilities resulting from the absence of many of their colleagues on the battlefield, physicians see the need for practicing more preventive medicine in addition to therapeutic services in the interest of national strength.

NUTRITION IMPORTANT ASPECT OF PREVENTIVE MEDICINE

One of the most important aspects of preventive medicine is nutrition; nourishing, well-chosen foods are vital to building a strong

healthy population. When there is a shortage of food, feeding problems become uppermost in peoples' minds, and who is better qualified to cope with them than the physician? Is he not the one to interpret symptoms of malnutrition in terms that a layman can understand?

Jolliffe (¹) gives a clear picture of early symptoms of nutritional depression both in children and adults, which laymen should be taught to recognize. They include lack of appetite, failure to eat adequate breakfast, lassitude and chronic fatigue, loss of weight, lack of mental application, loss of strength, sore mouth or sore tongue, chronic diarrhea, nervousness and irritability, paresthesias, frequent colds, nightblindness, photophobia, burning or itching of the eyes, lacrimation, muscle and joint pains, sore bleeding gums, and sores at the angles of the mouth.

Jolliffe, also suggests that in addition to these symptoms physicians need to be increasingly aware of the signs of nutritional depression which only they can interpret, as vascularization of the cornea; xerosis conjunctivae, Vincent's stomatitis; minimal changes in color and texture of the tongue such as red, swollen lingual papillae and papillar atrophy; muscle tenderness in the extremities; poor muscle tone; loss or impairment of vibratory sensation in the toes; changes in the tendon reflexes with particular emphasis on loss of ankle jerks; skin lesions of pellagra; non-specific vaginitis; follicular hyperkeratosis of exterior surface of the extremities; and rachitic deformities.

BASIC 7 FOODS

The Food and Nutrition Board of the National Research Council has set up a standard of dietary allowances which are needed for optimum health. To meet these a selection from eight specific food groups was recommended. In view of the current shortage of proteins, two of these original eight groups (namely, eggs and the meat, poultry and fish group) were combined in one in the Basic 7 chart. A color typical of foods of the group was assigned to each group and colored posters of the Basic 7 have been widely distributed. They recommend eating some food from each group every day as follows:

* Nutritionist, Delaware State Board of Health.

- Group I Green and yellow vegetables (Green)
- Group II Oranges, tomatoes, grapefruit (Orange)
- Group III Potatoes and other vegetables and fruits (Blue)
- Group IV Milk and milk products (White)
- Group V Meat, Poultry, Fish or Eggs (Red)
- Group VI Bread, flour, cereals (Brown)
- Group VII Butter and Fortified Margarine (Yellow)

PROSPECTIVE SUPPLIES OF FOOD

Nutrition teaching, to be practical, must be based upon current supplies and the prospects for the future supply of food. We have felt the shortage of protein and fat in their rationing. We are likely to feel it more in the event of regional or national milk rationing. Considering the variety of nutrients milk provides, milk is the most important single food and present standards of a quart of milk daily for children and pregnant women, one pint for adults should not be relaxed until circumstances compel it. If milk and cheese are limited, other good sources of calcium should be stressed. These include kale, turnip greens, broccoli, dried beans and soybeans. In addition, physicians can encourage the use of home produced meat, soybeans and peanut products to increase protein in the diet.

Rationing of commercially canned vegetables and fruits has doubtless cut their consumption, both in quantity and kind by shifting demand to products with lower point prices. A notable example is canned tomatoes which have long been a popular vegetable and a valuable source of vitamin C. Confronted by the high point price of canned tomatoes and the relatively high money price of citrus fruits and fresh tomatoes at this time, it is likely that many families will be eating scorbutic diets unless they learn of and use other vitamin C rich foods, as fresh raw cabbage and green pepper, strawberries, and cantaloupe. Even in season these foods are too expensive for some families to buy.

Sugar rationing has been a boon to health workers. Consumption of sugar in this country has increased from a few pounds yearly

a century ago to an annual prewar consumption of over 100 pounds. ⁽²⁾ Considering the fact that refined sugar contributes only energy Jolliffe ⁽¹⁾ suggests that only enough sugar be retained in the diet to make food palatable, and it and most of the other vitamin-free or vitamin-poor foods be eliminated from the diet. In this group he includes candy, jams, jellies, highly-milled grain products that are not enriched (corn and rice cereals, hominy, white rice, rice pudding, cornstarch desserts), sweetened carbonated beverages and alcohol. The role of thiamine in completing the oxidation of carbohydrates makes increased amounts of thiamine necessary whenever excess carbohydrate is ingested. Through the years people have come to prefer highly refined cereals; thus our most dependable source of B vitamins has been devitalized to a large extent. Recognizing this, Pett ⁽³⁾ explodes the theory that sugar decreases fatigue when he states "Under certain circumstances in a diet otherwise marginal with respect to thiamin, there is no doubt that the consumption of sugar may actually increase rather than decrease fatigue." Wilder ⁽⁴⁾ shares this view, especially in regard to soft drinks.

WHOLE GRAINS VITAL TO EFFICIENT WORK

The one food group we are told we will have ample supplies of is cereal. Of some 40 nutrients needed by the human body, the whole wheat kernel supplies parts of 37. Milling the grain to white flour removes all but 7 of these nutrients. Enrichment, which is now compulsory, adds back 4 more nutrients, making a total of 11. The comparative value of whole grain versus enriched products is apparent—while enriched foods are better than non-enriched, whole grain products are best.

It would seem desirable that efforts be directed toward increasing consumption of whole grains, especially in the light of recent research. An editorial in the Journal of the American Medical Association ⁽⁵⁾ concludes that since the quality of protein in wheat bran and germ (milled out in white flour) is of higher biological value we should keep in those protein constituents, not to mention the vitamins. Recent evidence ⁽⁶⁾ indicates that dental health requires an adequate amount of B vitamins. Several recent reports ⁽⁷⁾, ⁽⁸⁾,

(⁹) including a report from the Harvard Fatigue Laboratory (¹⁰) have indicated that a lack of B complex in the diet of trained men causes decreased work output, lack of pep and anorexia, without clinically recognizable signs of deficiency disease. It is notable that menus in (⁸) might appear on an average American table. On the other hand, Keys and Henschel (¹¹) reported that on the basis of their work with 26 soldiers receiving adequate diets, administration of excess vitamins does not improve physical vigor or capacity to work. Thus consumption of more whole grain products would supply ample natural B vitamins in the normal diet and release sorely needed synthetic vitamins for therapeutic use elsewhere.

CONCLUSION

Physicians are the logical teachers of health through better nutrition. Instruction must be practical and attuned to the times. The Basic 7 should be a guide for checking food habits. Since supplies of animal protein are limited, the use of complete vegetable proteins as soybeans and peanuts should be encouraged. Milk consumption should be adequate as long as possible, and if restricted, more green leaves and dried beans should be eaten. The abundant supply and increasing importance of whole grains, both for their protein and vitamin content, warrants their universal use. Most vitamin- and mineral-free products as sugar, jams, jellies, highly milled cereals, carbonated soft drinks and alcohol should be eliminated from the diet, retaining only enough sugar to make food palatable. Finally, physicians can help to avert hysteria because of dwindling food supplies by reassuring the public that health can be maintained, and in so doing will contribute to our national strength.

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DELAWARE'S WARTIME DENTAL PROGRAM

MARGARET H. JEFFREYS, R. D. H.,*

Dover, Del.

In Delaware, as in all other states, every effort is being made to meet the wartime dental needs of the people. This naturally involves problems that are not encountered in times of peace but the dental profession, together with closely related professional groups, is determined that measures will be found that will enable it to cope with the situation.

First, we have not only a poor distribution of dentists but a scarcity of dentists as well. Like the physicians, the quota of Delaware dentists now in the military services has been greatly over-subscribed. Delaware has approximately 1 dentist for each 5000 population, while the national ratio is 1 dentist for each 2500 population. Dentists have gone from communities where even in ordinary times, adequate dental services were not available. The influx of industrial workers, not only those working in war production plants here but many from adjacent over-crowded industrial areas, has noticeably increased our problems.

All this has caused the dental profession grave concern and they question how to accomplish the greatest amount of good under present circumstances. Logically, the answer to that question, at least in part, is to see that all high school students are provided with necessary dental attention before graduation, particularly those who expect to enter military service or civilian war activities. This program, while placing an added burden upon the shoulders of civilian practitioners, should help to prevent future absenteeism in industry and to relieve to some extent the dentist in military service. (There are approximately 13,000 dentists responsible for the dental needs of millions of fighting men—many of whom were first rejected because of neglected mouths and later, when physical standards were lowered, reclassified for service.)

To this end, it is planned that all 11th and 12th grade students in all high schools throughout Delaware will be examined by the dental hygienists employed by the State

* Director, Oral Hygiene Division, Delaware State Board of Health.

Board of Health and the Board of Education in Wilmington. Since examinations of such a nature, made in past years, have revealed that many of our students are in excellent dental condition, this examination may serve as a weeding out process, thus saving the dentist more time to devote to those who are in need of dental care. Such students as are found to have defects will be urged to go to their own family dentist, but in cases where this is economically impossible every effort will be made to help in providing financial assistance.

For such a small state, we do have a fair quota of industries, and it is unfortunate that not one of these plants employs either full-time or part-time dentists or other dental personnel. A survey was made several months ago by a committee appointed by the State Dental Society to ascertain what provisions are made for dental care for industrial workers in Delaware. As a result of this committee's work, the State Dental Society has indicated its willingness to give priority dental appointments to industrial workers in need of emergency dental care. This was done out of consideration for the shortage of available dentists for industrial work. Since the American Dental Association, cooperating with the United States Office of Education and the United States Public Health Service in the nation-wide High School Victory Corps Physical Fitness Dental Program, have made a similar request (priority appointments for high school students) it is not difficult to visualize what can and probably will happen to the civilian population not engaged in critical war jobs as far as adequate dental care is concerned.

Even so, we all realize that the war effort must come first. We will continue our efforts in health education for all groups as in the past, stressing in particular better nutrition and better daily home care. While these two factors are but complementary to the prevention of dental caries they are, none the less, essential to good mouth hygiene. Moreover, constant repetition and emphasis does produce a consciousness of mouth health that will prevail when adequate dental service for all is again available.

Dr. Walter Pelton, U. S. Public Health

Service, in the July, 1943, issue of the American Journal of Public Health discussing Gearing Dental Public Health to Meet Wartime Conditions ⁽¹⁾ asks the question "How can civilian dental needs (general health conservation and care of specific dental diseases) be met under the conditions created by war?" Further, he states: "To deal effectively with the problem, it is necessary that:

1. Dentists remaining in civil life be distributed in the population according to the most favorable ratio permissible.

2. Industrial and vital war areas be supplied with dental facilities in order that no person shall be absent from his job because of the lack of basic dental services. This applies both to the factories and nearby housing developments.

3. The usual school dental service programs be extended to include services to high school pupils. The gap in services between elementary school children and those in high school should be closed as rapidly as possible. The manpower to supply dental service to these categories may have to be assigned by procurement agencies, if objectives cannot be obtained from voluntary efforts.

4. Sub-professional personnel be utilized to the fullest possible extent.

5. In critical areas it may be wise to request that highly refined appliances and replacements be not constructed until some more opportune time, and thus permit a health service type of dentistry to be rendered to a large number of patients.

6. In extreme circumstances, a system of priority of patients, which will give first consideration to the most productive members of the community, may be advisable."

Our wartime dental program in Delaware as it now stands includes some of the measures suggested by Dr. Pelton, and it may be necessary to include others if and when the situation becomes more critical. In our opinion, however, the first four measures suggested would prove a decided asset to any state or community dental program at any time, and we would like to see them incorporated in our permanent dental program.

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Editorial

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THANKS

When the New Series of THE JOURNAL began in 1929 the Publication Committee decided that the issues of the fourth, eighth and twelfth months should be special ones. Thus, the April issue is the Mental Hygiene Number, the August issue the State Board of Health Number, and the December issue the Transactions Number of the Society and its House of Delegates. There have been occasional minor variations in the dates of the first and third special numbers, but the State Board of Health Number has invariably been the August issue, since its inauguration by Dr. Arthur C. Jost in 1930.

This year, with a shortage of personnel and with unusual demands upon his facilities, the Executive Secretary of the Board tried to beg off, but the Editor, wrapping himself around the Secretary's neck like a boa constrictor, refused to be shaken off and vowed

that a precedent of so many years could not be broken, war or no war. And so the Secretary, perhaps more in pity than passion, gracefully yielded and thus we have, war or no war, another State Board Number. By one of those funny quirks of fate this issue is not only longer but better than the average "Board" number, and at least two of the twelve articles are of outstanding merit.

The only controversial article is the one on "Maternal and Infant Care for Wives and Infants of Enlisted Men," which is described by Dr. Marion Hoptopp (why does she spell her first name with an "o" instead of an "a"?). This proposition, sired by the *paters* in paternal Washington and wet-nursed by those States which agree to knuckle down to the Federal dispersing hand, i. e., the too high taxes that you and we have paid, and here we break forth into verse and say:

The hand that holds the purse-strings
Is the hand that controls *all* things!

is not popular with those physicians of Delaware with whom we have talked. They regard it as rampant bureaucracy in an insidiously delectable form, and another bang on the Federal entering wedge of State medicine, along with the other proposition labeled: "Plants in Aid." Maybe our opinion doesn't count, but we fully agree with them. This particular proposition has already become a political issue, and in this connection one must bear in mind three things: (1) There is a Presidential election coming next year; (2) There are approximately 12,000,000 men in the services who control approximately 18,000,000 votes; and (3) The gang that has fed at the Federal troughs for the past twelve years would dearly love to feast there, another four years! This last item is a natural—who wouldn't rather feast than work? THE JOURNAL simply *must* find space in the September issue to reprint the story from Ohio.

But to Dr. Cameron and his entourage THE JOURNAL is glad to extend its congratulations for an unusually good number, and to offer its—small pay—thanks.

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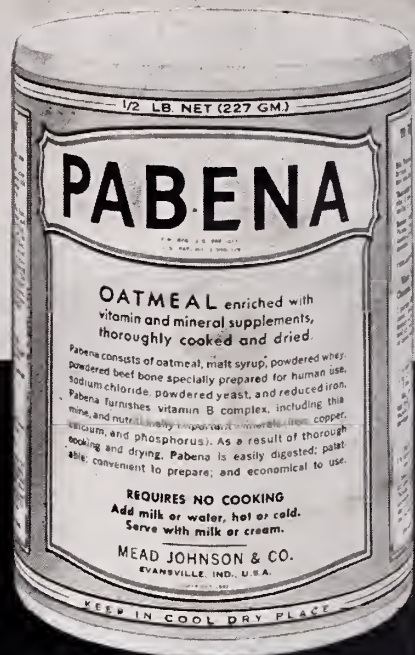
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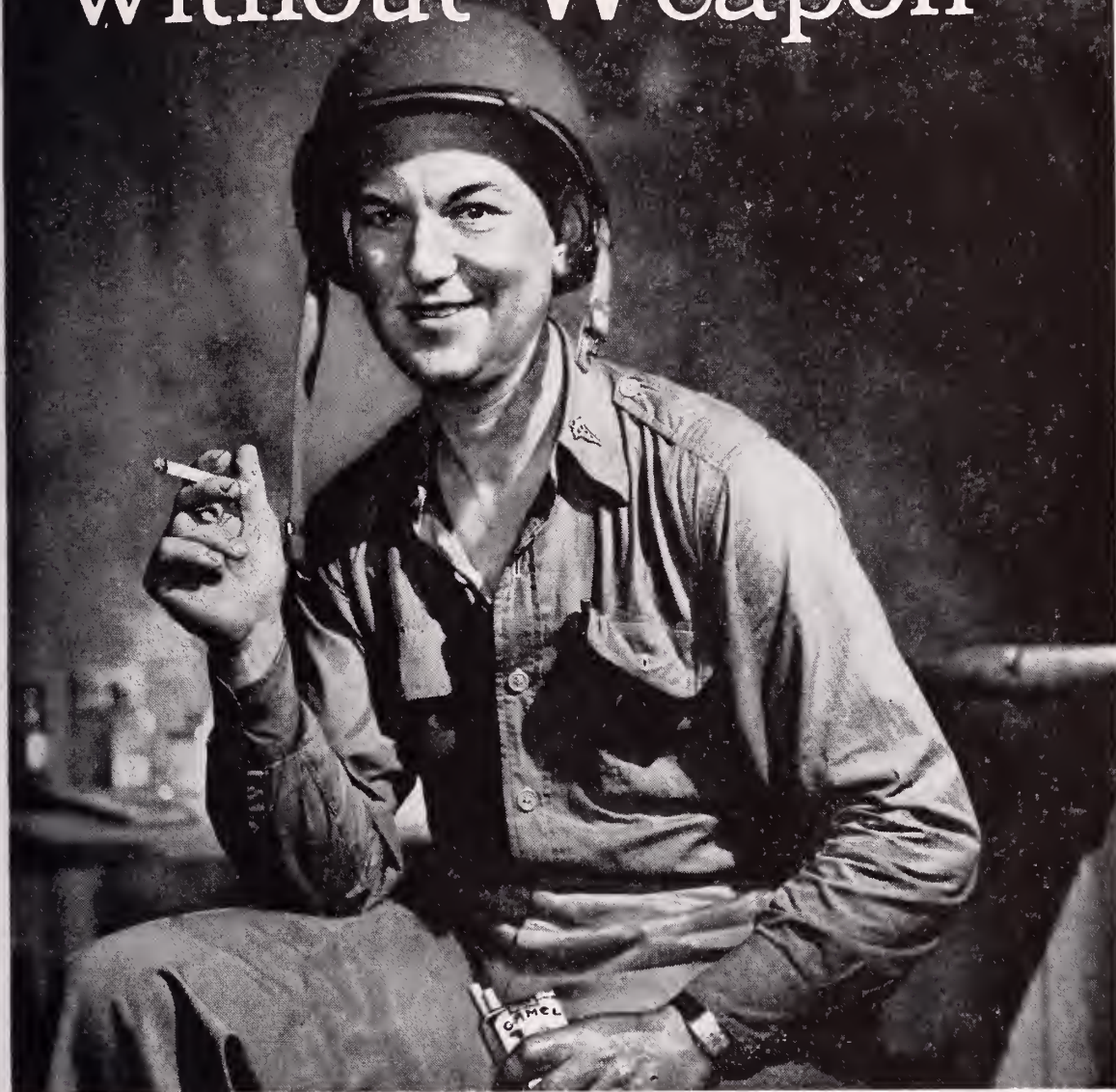
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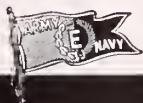
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INTER-AMERICAN COOPERATION IN HEALTH WORK

COL. ALBERT R. DREISBACH, M. C.,
U. S. Army,*
Washington, D. C.

There is a phase of inter-American cooperation which presents a particularly striking contrast with the aggressions of militaristic powers. A high order of cooperation has been achieved among the American republics in the interest of building a peaceful and better civilization in the New World and protecting this hemisphere against the designs of would-be world conquerors. Inter-American cooperation has progressed to new heights of achievement in the past eighteen months. Notably it has moved forward in the field of health and sanitation.

The health and sanitation work has evolved from the conference of American foreign ministers held at Rio de Janeiro soon after Pearl Harbor. That conference, as you may recall, adopted a large program to strengthen the defenses of the hemisphere and to mobilize the economic resources of the Americas. To support this mobilization, the conference recommended cooperative health and sanitation measures to be undertaken by the American republics within their individual capacities to contribute funds, technical skill, materials and labor. In accordance with the Rio recommendations, the United States has entered into health and sanitation agreements with fifteen of the other American republics. This work rests on the firm foundations laid through many years of health progress by the other American republics, by private organizations and by the Pan American Sanitary Bureau. The pioneering and established organizations are aiding in generous measure the supplemental program which was made necessary by the scale of wartime projects for

defense and for mobilization of hemisphere resources.

This supplementary program has taken form in wartime. It has its origin in wartime necessity. This necessity in part is the imperative need for developing new and additional hemisphere resources of minerals, fibers and other tropical-grown materials. These are required partly to offset loss of supplies from outside the Western Hemisphere. This humane work in the field of health and sanitation is symbolic of the friendly relations of the American republics, of their sincere urge to cooperate and to work closely together toward the goal of making life in the Americas better for the average human being. The hospital built through inter-American cooperation might well symbolize the constructive objectives of the inter-American system. It is a symbol which speaks for the saving of human lives. The cannon, the symbol of military aggression, stands for destruction of human life.

The doctors, nurses, sanitary engineers and others at work in the inter-American health and sanitation program are legions of peace. They are carrying into action the Good Neighbor spirit which animates inter-American relations. The program embraces hundreds of construction projects and health activities. These include many new hospitals, health centers, dispensaries, nursing schools, sanitation works and training projects. These add up to the largest health and sanitation program yet undertaken on the basis of inter-American cooperation. The nursing schools, hospitals and health centers will remain after the war as monuments to the peaceful and the humane goals of inter-American cooperation.

Long ago, through such institutions as the Pan American Sanitary Bureau, improvement in hemisphere health standards was recognized as one of the major objectives of inter-American cooperation. Now the need

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for inter-American collaboration in this work is more compelling than ever. War, even while it results in wholesale destruction of life, generates counter-measures to protect life. We have our soldiers of production on the home fronts as well as soldiers on the overseas battle fronts. And, for the safeguarding of the Americas, it is just as necessary to have healthy soldiers on the production fronts as on the military fronts. One aim of the health and sanitation program is to help protect our soldiers of production while, at the same time, continuing to move toward the long-range goal of higher living standards of the peoples of the Americas.

The benefits of the inter-American health and sanitation program will be available to millions of people in the other American republics. These people include workers in the Amazon forests and in the jungles of Central America; miners in the mineral-producing countries of the hemisphere; highway workers in Central America; workers on fiber and quinine plantations; workers on strategic defense bases. These workers in strategic projects receive immediate and direct benefits from the scores of hospitals, health centers, sewage and water supply and other projects completed or underway.

But the indirect benefits extend much further. Let me digress to explain why. Most of Middle and South America lie in tropical and semi-tropical climate. These tropical areas include the immense Amazon basin, an area almost as large as the United States. In the tropical climates, with their heat, humidity and primitive jungles, disease always has been a primary problem, whether in economic development or in defense strategy. In tropical areas, the malaria-carrying mosquito is the deadliest foe of man. Malaria has taken countless lives in the tropics—and still takes a heavy toll. On Bataan Peninsula, in the Philippines, malaria did more than Japanese bullets to weaken our brave fighting men.

In the tropical Americas, as at Bataan, malaria saps the strength of men and kills many of those who become infected. Industrial enterprise in the tropics, therefore, first must reckon with health and sanitation measures to protect those who must work in humid

and hot climates within reach of the malarial mosquito. This is the background of much of the health and sanitation work now being carried out on the basis of the Rio de Janeiro recommendations.

The tropical Americas hold some of the richest natural resources on earth, including supplies of rubber, fibers and other strategic materials formerly imported mainly from the tropical areas of the Far East. It was inevitable that wartime mobilization of hemisphere resources would center in large part within malaria-infested regions, such as the Amazon basin. So, in these tropical climates, the chief work is the malaria control. This work involves drainage operations for elimination of mosquito breeding places, spraying and oiling of stagnant pools, building of hospitals and health centers to care for the sick, distribution of anti-malarial drugs. All who came within radius of this work benefit from it, whether it be a rubber tapper or an inhabitant of a malaria-harassed community engaged in some other occupation. The mosquito makes no distinction between a rubber tapper and a citizen in some other line of work. In the tropics, where malaria abounds, everybody lives under the threat of infection. Thus, while tying directly into the development of economic resources, the malaria control projects spread their benefits far and wide.

This is characteristic of public health work. No favorite group of special privilege reaps the reward of public endeavor in this field. Poor or rich, all stand to benefit from improvement of public health conditions, whether it be control of malaria or the improvement of water supply. The airplane, the railway, the modern highway have increased the dangers of swift spread of disease, once it starts on an epidemic course. This is true of malaria as of other diseases.

So the Good Neighbor spirit finds eloquent expression in such work as the campaign against malaria now being waged in the Amazon countries, Central America, Haiti. Along the Amazon River and its tributaries, there is being established a chain of hospitals, health centers and floating dispensaries. This chain of malaria control posts runs for more than 2,000 miles from Belem, near the mouth of

the Amazon, far inland to the headwaters of the Amazon in Bolivia, Peru, Ecuador, Colombia. A unique fleet of floating dispensaries is in operation and is being expanded. These are motor launches, equipped with medical supplies and doctors, to reach remote sections of the Amazon country, far away from the few centers of population.

The work in Brazil affords a good illustration of the cooperative aspects of the inter-American program. Brazil has set up a special agency known as the *Servicio Especial de Saude Publica*. This agency is a channel for cooperation with the Institute of Inter-American Affairs, an agency of the Office of Inter-American Affairs. Assigned to Brazil by the Institute are forty United States doctors, sanitation engineers and other specialists. Brazilian specialists and technicians number more than four hundred, in addition to 2,500 other employees. Brazil contributes funds, along with materials, labor, equipment. Altogether these contributions make a cooperative undertaking on truly inter-American lines.

This is pretty much the pattern of the work in other countries. In Spanish-speaking countries, most of the republics participating in the program have organized similar agencies known as a "*Servicio Cooperativo Interamericano de Salud Publica*." Where they are able financially, the participating countries contribute funds to supplement contributions of the United States. Their contributions also include supplies, land, labor. On the whole, this health program may justifiably be described as one of the highest expressions of inter-American cooperation, on a foundation of peaceful, friendly relations.

The results of this cooperation will endure long after the war. For instance, extensive training of doctors, engineers, professional and practical workers, nurses and sanitary inspectors is part of the work. These professional and technical workers are being prepared to take their places in the hospitals and the clinics rising in Central and South America. They will join the ranks of the hemisphere's growing forces of public health workers. The knowledge and the skill they acquire will be useful for many years to come. This training work will extend and strengthen

public health traditions in the other Americas. It will contribute to the elevation of health standards. The increasing body of trained public health workers is just as important as the construction of hospitals and health centers and modern sewage and water supply systems. The training projects are of two types. Under one method, physicians, nurses and engineers receive travel grants for training and observation in the United States or Latin American countries. Under the second method, training courses are given locally by the "*Servicio*" staffs in collaboration with local health departments or hospital staffs.

Training of additional nurses is one of the most urgent aspects of the main program. This work includes the establishment of nursing schools, reorganization of existing nursing schools, provision of advanced and brush-up courses for practicing nurses. In various countries cooperating in the program, girl students are starting courses patterned after those of the leading nursing schools of the United States. The United States Public Health Service and the Pan American Sanitary Bureau are aiding in supplying teacher-nurses and helping to lay out courses of instruction. The project for bringing to the United States two Sisters from each of the other American republics for training under the auspices of the Catholic Association of Hospitals is part of the training activity.

Thus a broad program is under way to raise health standards in the other American republics. What this may mean for the future of the American peoples, especially in the tropics, is clear to anyone who has studied the basic importance of health work in these countries. Quite properly our sister republics to the south look to the United States for aid in this work. If we are to have genuine Good Neighbor relations as a basis for progress in the Western Hemisphere, it must proceed in an atmosphere of mutual aid. Mutual aid is the motivation of the inter-American health and sanitation program. The United States, in the spirit of mutual aid, contributes out of its great resources of medical knowledge and supplies to the advancement of hemisphere health standards.

I think I can best illustrate what mutual

aid means in human terms by telling you the story of a how inter-American cooperation functioned in checking a severe epidemic of malaria among the Indians of Colombia's Guajira peninsula. The malaria epidemic threatened a large part of the population, numbering more than 40,000. The Guajira peninsula juts into the Caribbean. Malaria usually is prevalent in varying degrees. Late in 1942, however, it increased to the proportions of a very severe epidemic. Drought during the years 1939-41 had forced a migration of population to wetter sections where malaria existed. Last year, with the arrival of heavy rains, a return flow of population set in. The returning migrants brought with them many cases of malaria. So malaria increased until about 80 per cent of the inhabitants of the southern part of the peninsula were affected, with a mortality rate of 10 per cent.

Fortunately, it was possible through inter-American cooperation to take swift action. Colombia's Servicio Cooperativo Interamericano de Salud Publica, set up as a medium of cooperation in the inter-American health program, organized an emergency expedition. The expedition consisted of three doctors, a laboratory technician and two sanitary inspectors, directed by Dr. Alfredo Landinez, an eminent Colombian physician. The expedition carried diagnostic equipment, anti-malarial drugs and materials to control mosquito breeding. The Colombian ministry of war provided airplanes to move men and supplies to Uribia, center of the affected area. The United States military attache at Bogota managed to get a "jeep" for the expedition. The United States naval attache provided air transportation for Dr. John Bugher of the Rockefeller Foundation, and for members of Dr. Landinez' party. Atabrine was sent to the Indians in large quantities.

By latest accounts, these measures have been successful. The epidemic has been checked. The groundwork has been laid for prevention of another epidemic. Many lives have been saved.

This is only one incident in the inter-American battle against disease which is now being waged on many fronts. Besides malaria, the work includes campaigns against tuber-

culosis, typhus and other diseases. Anti-typhus vaccine is being sent by air transport into the Bolivian Altiplano to control typhus in the tin mining areas. The Institute of Inter-American Affairs is shipping 100 bottles of the vaccine weekly, enough to vaccinate 1,000 persons. Special disease problems are being tackled as part of the main program. This is illustrated in an effort to control onchocerciasis in Guatemala and southern Mexico. This is a worm disease which causes blindness. It is estimated 40,000 persons suffer from the disease in Guatemala. The Institute of Inter-American Affairs has allotted \$100,000 to the Pan American Sanitary Bureau to further the work these countries are doing in controlling this disease.

The health and sanitation work is backed up by a food program, undertaken by the Institute of Inter-American Affairs in cooperation with other American republics. Disease and hunger are twin problems in many places. Better food supply is as essential as hospitals and drugs in protecting the workers in the Amazon valley, for example. To become healthy, energetic soldiers of production, the workers in our sister republics producing strategic materials must have proper food. Food, consequently, has been linked with health to make what is known as the "Basic Economy" Division of the Coordinator's Office. The same cooperative pattern which runs through the health and sanitation work applies to food projects in areas which need increased local production of food, either because they have lost outside supply sources or have increasing need of food in defense and strategic production projects. Like the health and sanitation work, the food program promises to bring lasting benefits in the improvement of living standards in the Americas.

Health and food are the elemental human needs. They are just as elemental in peacetime as in war. The battle against disease and hunger is never-ending. Freedom from disease, freedom from want, are worthy goals of inter-American cooperation, now and for the long pull. When the war ends, doubtless much of the apparatus for arms production and military organization will be dismantled. But the apparatus of the inter-American

(Concluded on Page 177)

Editorial

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VOL. 15 SEPTEMBER, 1943 No. 9

THE ANNUAL SESSION

The Annual Session of the Medical Society of Delaware will be held at the Delaware Academy of Medicine, Wilmington, October 12 and 13, 1943. The skeleton program has been set up tentatively as follows:

Tuesday, October 12th

2:00 P. M.—General Meeting
5:30 P. M.—Adjournment
7:00 P. M.—Supper
8:00 P. M.—House of Delegates

Wednesday, October 13th

9:30 A. M.—General Meeting
12:30 P. M.—Adjournment
1:00 P. M.—Luncheon

2:00 P. M.—General Meeting

5:30 P. M.—Adjournment

The officers have experienced considerable difficulty in securing capable and interesting speakers. Almost everybody is over-worked and it is really imposing on good nature to ask the hurried and harried doctors to prepare papers for us and then donate the time necessary to come here and read them. The speakers so far scheduled are all good ones and the program as now outlined is one of the best in recent years. While the day and hour remains to be set for the papers, the following essayists have accepted invitations: Drs. Wayne W. Babcock, Maj. Snedeker, Col. J. B. Brown, Lemuel H. Magee, Capt. L. C. LeSieur, John H. Foulger, Edgar E. Evans, Anthony M. Sindoni, Jr., Charles H. Dunn, William P. Belk, and William Erb.

The subjects of these papers covers a wide range, and while war medicine is appropriately given a major share of time, the program also includes much of interest and instruction to the doctor who remains on the home front.

We earnestly urge our members to show their appreciation of the speakers by attending the meetings.

ARE WE SUFFICIENTLY WAR CONSCIOUS?

On September 18th we attended a baseball game at Wilmington Park. The evening was quite cool and the breezes later became too chilly, but we went anyhow—our civic duty, you know. Putting the gas buggy in the stable we walked, over a mile, to the ball park, only to find 250-300 autos parked there.

Now this may be all right, after all! Who are we to judge our fellow-man? Yet, with a boy in the Army, we couldn't help feeling that this war has not yet come home to too many of our citizens. We agree with those who maintain that our whole gas and rubber program has been bungled, but two wrongs never made a right. Anyhow, *we* walked!

REPORTS OF OFFICERS AND COMMITTEES

1—Report of the President

The stress of war conditions has curtailed the activities of your President this year. There were no special meetings of the Society or of the House of Delegates. Routine administration matters were handled as they arose, with the assistance of the other officers and of the committees.

The program for this Session is as large and varied as the shortage of available speakers would permit.

I wish to thank the Society again for the honor of being its President this year.

Respectfully submitted,

LAWRENCE J. JONES, *President*

2—Report of the Secretary

Your Secretary's work has been mainly correspondence. We who are in practice are all too busy to devote the time and thought to our Society that we should like to devote.

In arranging a program this year unusual difficulties were encountered, as might be expected. While considerably more abbreviated than we wish, it is never-the-less a good one and one which we believe our members will find pleasurable and profitable.

Respectfully submitted,

W. O. LAMOTTE, *Secretary*

3—Report of the Treasurer

GENERAL FUND

September 17, 1942—Balance forwarded \$1385.55

Receipts

Dues, New Castle County (136) ..\$810.00
Dues, Kent County (15) 90.00
Dues, Sussex County (25) 150.00
Dividends, Bank Stock 84.00

Total 1134.00

Total \$2519.55

Disbursements

A. M. A. Directory\$ 15.00
Annual Session 157.00
Secretary's Expenses 42.23
Flowers 20.00
Printing 2.75
N. C. C. Med. Soc. (Return
of dues to members in
in Armed forces) 312.00
Delegate to A. M. A. 83.20
Legislative Rep. 500.00

Total \$1132.18

August 1, Total \$1387.37

DEFENSE FUND

September 17, 1942—Balance on hand \$5325.59

Receipts

Interest on deposits\$159.75

Total \$5485.34

Disbursements

United States War Savings Bonds \$2220.00
August 1, 1943—Balance on hand (Cash) \$3265.31

Respectfully submitted,

A. LEON HECK, *Treasurer*

4—Report of the Councilors

No special business having been presented to the Council this year we have no report to make.

Respectfully submitted,

HOWARD E. LECATES, *Councilor*

5—Report of the Committee on Scientific Work

Most of the states are having their meetings, in spite of the present handicaps. Your officers decided to do the same. The program speaks for itself. We hope thereby also to have good material for THE JOURNAL.

Respectfully submitted,

W. O. LAMOTTE, *Chairman*

6—Report of the Committee on Public Policy and Legislation

The usual duties of the Legislative Committee, representing the Medical Society of Delaware, are two-fold: (1) to see that proper legislation is presented to the General Assembly which will be a benefit and a protection to the physicians of Delaware; and (2) it is also just as important to see that improper and harmful bills are not enacted by the Legislature. Your Committee feels that it was successful in carrying out these duties during the past year.

It was decided by the Committee last Fall, at a joint meeting with the Delaware State Board of Medical Examiners, that such a program could not be carried out successfully without the aid of a professional assistant who could be present at all times during the session of the legislative body and work for their interests. Therefore, such a representative was chosen and in our opinion was well worth the stipend paid him.

The State Society was interested in presenting only one bill to the last General Assembly. This bill was known as Senate Bill No. 38, entitled "An Act to Protect the Health and Safety of the Civilian Population during the Emergency Period." This bill gave the Medical Council the power to issue temporary licenses to qualified physicians from another State who could, where necessary, replace physicians who had gone into the armed services, and also to supply physicians for several important industrial plants located in Delaware.

This bill also reduced the required twelve months of internship to nine months in order to hasten the supply of young physicians for the Army and Navy. The bill was approved by the Governor on March 4, 1943.

On the other hand, several objectionable bills, one of which would have jeopardized our Medical Practice Act, were defeated through our efforts.

Respectfully submitted,

JOSEPH S. MCDANIEL, *Chairman*

7—Report of the Committee on Publication

As heretofore, we transmit the report of the Committee in two parts: (1) that of the Editor, and (2) that of the Business Manager.

Report of the Editor

We are now nearing the end of Volume 15 of the New Series. The amount of material published about equals that of previous years, and its quality equals that of other volumes. As judged

by the requests for reprints or whole issues or exchanges, our JOURNAL is being read more widely than might be surmised from its mere size.

For the past several years the amount of material derived from our Annual Sessions has been considerably less than that required to maintain THE JOURNAL. Contributions from our members, from county society meetings, and from without the state have sufficed, in the main, to bring our issues up to our average contract number of pages. However, we have been obliged, in too many instances, to print miscellaneous material that has much less value to us than the scientific material. Hence, once again, we ask our members to write more scientific papers for THE JOURNAL, a task that will well repay one for the time and energy consumed in the preparation. More especially, we would like to have short papers reporting interesting or unusual cases, which do not require an exhaustive review of the literature.

Once again, we take this occasion to thank our printers, The Star Publishing Company, for their continued efforts and courtesies; the familiarity their personnel now has with this work relieves the Editor of many petty details and annoyances.

To our members we extend our thanks for their continued cooperation during this, the twenty-eighth year of our service.

Respectfully submitted,

W. EDWIN BIRD, *Editor*

Report of Managing Editor

(August 1, 1942 to August 1, 1943)

A-Checking Account

Checking Account, Wilm. Trust Co., Aug. 1, 1942	\$ 269.67
Transferred from the Savings Account	300.00
	<u>\$ 569.67</u>

RECEIPTS

Advertisements	\$3,093.73
Bonus on ads from A. M. A.	328.95
Subscriptions:	
Med. Soc. Members, Present Year	176.00
Others	15.00
Interest on Bonds	47.10

Total Receipts \$3,660.78

DISBURSEMENTS

Printing and mailing Journal	\$2,556.30
Postage	6.15
Salary of Editor	1,200.00
Salary of Stenographer	180.00
Copyrighting Journals	24.00
Stationary	57.50
Engraving	13.25

Total Disbursements \$4,037.20

Deficit	376.42
Balance	<u>\$192.25</u>

B-Savings Account

Savings Account, Wilm. Trust Co., Aug. 1, 1942	\$5,789.68
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RECEIPTS

Interest on Savings Account	1943
	\$ 26.97
Total Receipts	<u>\$ 26.97</u>

DISBURSEMENTS

Transferred to Checking Account	300.00
Purchase of War Bonds	3,502.38

Total Disbursements \$3,802.38

Balance	<u>\$2,014.27</u>
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Grand Total (Accounts A & B) \$2,206.52

SUMMARY

Savings Account Balance	\$2,014.27
Checking Account	192.25

Total Balance, Aug. 1, 1943 \$2,206.52

Respectfully submitted,

M. A. TARUMIANZ, *Managing Editor*

8—Report of the Committee on Medical Economics

Nothing of importance has been brought before your Committee on Medical Economics during this past year. We, therefore, have nothing to report.

Respectfully submitted,

E. R. MAYERBERG, *Chairman*

9—Report of the Committee on Necrology

Since the last meeting of our Society death has terminated the lives of the following active members: Lewis Booker, New Castle, September 28, 1942; Charles G. Harmonson, Smyrna, February 4, 1943; L. Augustus H. Bishop, Dover, March 13, 1943; Taleasin H. Davies, Wilmington, March 25, 1943; Kendall J. Hocker, Millville, April 24, 1943; Aristides J. Mavromatis, Newark, May 3, 1943.

Suitable obituary notices have been published in THE JOURNAL.

Respectfully submitted,

I. LEWIS CHIPMAN, *Chairman*

10—Report of the Advisory Committee Women's Auxiliary

The Committee had no official duties to fulfill during the past year and, therefore, has no report.

Respectfully submitted,

CHARLES E. WAGNER, *Chairman*

11—Report of the Committee on Cancer

The State Board of Health lists the deaths from cancer in 1942 as 330 resident and 19 non-resident, a total of 349. This compares with a total of 321 for 1941, an increase of 9%.

Last year a decrease in attendance at the down-state cancer clinics was reported. This decrease has not been progressive. The attendance is reported as stabilized at a somewhat lower level than in 1940. The cancer clinic in Wilmington reports attendance at pre-gasoline-rationing level, following a temporary decrease. Members of the Women's Field Army have assisted the cancer clinics in their follow-up contacts with patients.

On the whole, the state has not suffered the depletion of personnel skilled in cancer diagnosis and treatment which has been reported from certain sections of the country.

The work of the State Committee of the American Society for the Control of Cancer and its associated Women's Field Army continues under adequate medical supervision. All but two of your committee members are also members of the Executive Committee of the State American Society Committee. In all, that Committee lists 20 physicians and dentists among a total of thirty-three members.

An inquiry was received from one of your Committee Members concerning the advisability of establishing a cancer clinic at the State Welfare Home in Smyrna. Your Committee felt that this inquiry should be directed to the Kent County Medical Society.

Respectfully submitted,

FREDERICK A. HEMSATH, *Chairman*

12—Report of the Committee on Syphilis

For the report which follows credit must be given to the State Board of Health, and in particular to Dr. A. L. Chapman, Acting Director of the Division of Communicable Disease Control.

The expansion of military and industrial establishments in Delaware, which has occurred during the past year, is destined to continue until the present conflict has been successfully concluded. This expansion has accentuated the ever-important subject of venereal disease control.

Approximately 8% of all draftees examined in Delaware up until the present time have had positive serological tests. Most of these young men with syphilis have been sent to their family physician or to State Board of Health clinics for treatment. Eventually about 10% of them will be made available to the armed forces.

During the fiscal year 1942-43, 40952 injections of heavy metals were given in State Board of Health clinics. The average monthly patient load for these clinics was 1436. In the State Board of Health laboratory 19711 Wassermann tests and 48172 Kahn tests were done. This is an average of one test for each 5 residents of Delaware. 1527 smears were examined for gonorrhea.

Because few physicians report syphilis and gonorrhea little authentic information has been available in the past concerning the prevalence of the venereal diseases in the general population. The draft board figures have furnished the first valuable clue.

The subject of venereal disease control can not be brought up without some mention being made of juvenile delinquency. The emphasis which war places upon youth, the absence of many "industrial" mothers from their homes, and the separation of many young men and women from a stabilizing home environment, are factors which have favored juvenile delinquency and moral laxity. It may be that in the near future additional legislation will be needed to suppress prostitution and to control promiscuity. During this war the promiscuous young girl, not the professional prostitute, has been the most important purveyor of the venereal diseases.

Over 25% of the physicians practicing medicine in Delaware are now serving their country in the army or navy. More are scheduled to leave us. Those of us who remain will in the months to come be under a greater strain than ever before. There will be an understandable tendency to underestimate the importance of venereal disease control. This tendency must be combated for two definite reasons: (1) syphilis and gonorrhea cause a tremendous loss in man hours and in woman hours not only to the army, navy, and air force but to defense industries and the home front as well, (2) the scars, physical and mental, caused by syphilis and gonorrhea contracted today will remain long after this war is over to plague this generation and the generation yet unborn.

If the venereal diseases are to be kept within reasonably safe bounds time must be found to report cases of venereal disease. Time must be found to elicit the names and addresses of contacts of infectious venereal disease cases. These contacts can be investigated efficiently and diplomatically by our public health nurses. Time must be found to report infectious patients who are de-

linquent in treatment, so that they may be returned to treatment.

The medical profession has successfully met the challenge of many infectious diseases. Yellow fever, plague, cholera and leprosy are practically extinct. Tuberculosis is losing ground rapidly. Typhoid fever, dysentery, diphtheria, and smallpox are rapidly yielding to immunization procedures and improved sanitation.

There is no reason why in the years to come the venereal diseases can not in similar manner be eliminated from the civilized world. There is no better time to start than today.

Respectfully submitted,

J. ROSCOE ELLIOTT, *Chairman*

13—Report of the Committee on Tuberculosis

Your Committee wishes to submit the following report for the past fiscal year from July 1, 1942 to July 1, 1943:

There were 80 white and 54 colored deaths, or a total of 134. During this period there were also 4 non-resident deaths, 2 white and 2 colored. This is a decrease of approximately 11.2% over the previous year. Of these deaths 51 occurred in Wilmington: white 31—rate 31.3; colored 20—rate 136.3. 22 in rural New Castle county: white 14—rate 23.7; colored 8—rate 125. 19 in Kent county: white 13—rate 45.7; colored 6, rate 92.1. 42 in Sussex county: white 22—rate 49.2; colored 20, rate—217. The report of the morbidity figures for the same period were 109 from the city of Wilmington; 31 from rural New Castle county; 10 from Kent county; and 41 from Sussex county; a total of 191 for the state.

The average daily population of Brandywine Sanatorium was 120.2. There were 108 admissions and 126 discharges, 22 of which were deaths. The average daily population of Edgewood Sanatorium was 51.2. There were 83 admissions and 38 discharged; 34 of which were deaths.

Sunnybrook Cottage (preventorium conducted by the Delaware Anti-Tuberculosis Society) has 22 beds for the care of pre-tuberculosis children, and they report 25 children were under their care during the year. The patient days for the year were 7,242, an average daily census of 20.

Through the State Board of Health chest clinics there were a total of 475 visits by tuberculous cases; 120 of these were new cases, and of this total 67 were diagnosed as having active tuberculosis, and 53 were diagnosed as having an inactive lesion.

The tuberculin testing of all contacts under 14 years of age continues to be done in these clinics.

The report of the Visiting Nurses' Association of Wilmington shows 25 cases of tuberculosis admitted to their service during the year, and 6 cases were carried over from the previous year. Their total visits during the year on these cases numbered 374. The State Board of Health nurses during this fiscal year made around 4,000 follow-up home visits.

The Delaware Anti-tuberculosis Society continues to cooperate with the State Board of Health in tuberculin testing, xraying, and fluoroscopic. The Society now maintains three fluoroscopes, one at the Dover Health Center, one at the Georgetown Health Center, and one at the University of Delaware. The Society sponsored the high school xray survey in the Wilmington public and parochial schools, and at the State College (colored) in Dover, the films being read

at the Brandywine Sanatorium and a recheck taken on 14x17 films of the suspicious cases. A complete report of the findings of this survey appeared in the August issue of THE JOURNAL.

Other activities of the Delaware Anti-tuberculosis Society were: 12 health exhibits conducted; sponsoring of the fluoroscopic of 1440 students, teachers and employees at the University of Delaware; establishing a rehabilitation service for present and former patients; securing employment for 14 former cases; distributing 75,000 pieces of informative literature; 4,141 students in elementary grades enrolled in health program; holding of 103 meetings, conferences and health talks; and presentation of 9 radio programs.

Respectfully submitted,

LAWRENCE D. PHILLIPS, *Chairman*

14—Report of the Committee on Maternal and Infant Mortality

Your Committee has not met during the past year, but from the statistical data received from the State Board of Health we report that in 1942 the previous low maternal mortality of 2.1 per 1,000 live births was reduced to 1.7. Considering the great reduction in the number of physicians, this is gratifying. With a total of 5,218 live births, nine mothers were lost. The following causes are listed:

Acute yellow atrophy of the liver during pregnancy	1
Premature separation of the placenta with childbirth	1
Unspecified hemorrhage of childbirth	1
Other unspecified conditions of childbirth	2
General or local puerperal infection	1
Puerperal embolism and sudden death	1
Puerperal albuminurea and nephritis	1
Other puerperal toxemias	1

Five of the above deaths occurred in New Castle county, and four in Sussex county. Without details of the circumstances surrounding these deaths it is not possible to state whether or not any of the nine deaths may have resulted from lack of medical or nursing care. With the shortage in physicians there has been an increase in the percentage of hospital deliveries, and this may account for the new low maternal mortality rate.

The infant mortality rate of 47.3 per 1,000 live births is the third lowest since 1916, being a little higher than the all-time low of 43 obtained in 1941. The stillbirth rate of 30.8 compares well with that of 31 per 1,000 live births in 1941, although it does not approach the low rate of 25 reported in 1940.

Respectfully submitted,

CARL H. DAVIS, *Chairman*

15—Report of the Committee on Mental Health

The Committee feels, since nothing has been done in regard to the recommendations presented at the last Annual Session of the Society, that it is useless to present further problems to be solved until the present ones have been adequately cared for. Therefore the Committee reiterates the recommendations presented at the last Session.

Respectfully submitted,

PERSIS F. ELFELD, *Chairman*

16—Report of the Committee on Criminologic Institutes

Your Committee is of the opinion that the previous reports and recommendations of the Committee have been completely ignored. Thus the Society discourages the Committee's becoming serious in regard to its responsibility toward major problems with which the community is confronted.

The Committee suggests that the Society appoints a special committee to follow up all the resolutions passed by the Society at its Annual Session.

The Committee, in addition to the resolutions presented at the last Annual Session, wishes to impress upon the Society that the Society should seriously consider the appointment of a special committee to deal with post-war problems in conjunction with other state and city post-war organizations.

Respectfully submitted,

M. A. TARUMIANZ, *Chairman*

17—Report of the Committee on Medical Education

Your Committee reports that during the past year no sustained program for post-graduate medical education was carried on, due to the war. The proceedings of the county and state societies have centered chiefly on war medicine, and have been very educational in this respect.

Your Committee also assisted in the passage of a legislative act permitting our Medical Council to grant temporary emergency licenses to physicians coming into the state to meet certain emergency conditions. This Act expires March 4, 1945. If the war continues, it may be necessary to re-enact the bill for another two-year period.

Respectfully submitted,

E. R. MAYERBERG, *Chairman*

18—Report of the Committee on Revision of the By-Laws

Your Committee has spent a very considerable amount of time on this important task, and has offered (published in THE JOURNAL, July, 1943, page 126) a proposed set of new By-Laws which, in their opinion, brings our organization up to date and in line with that of other progressive states. However, since nearly a third of our members are away in the services, and since certain legal questions remain to be solved, and since certain criticisms, mostly constructive, have been brought to our attention, it is our considered opinion that these new By-Laws should receive at this Session only their first and second readings, by title, and that their third reading and adoption should be deferred for the duration, or at least till next year.

Respectfully submitted,

W. EDWIN BIRD, *Chairman*

19—Report of the Delegate to the American Medical Association

Your regular delegate, Dr. L. L. Fitchett, and his alternate, Dr. C. J. Prickett, were unable to attend the meeting of the House of Delegates this year, and arrangements were completed for me to represent our Society.

The House of Delegates convened in the Palmer House, Chicago, on June 7th, at 10 A. M. A total

of 170 delegates were seated and all constituent state associations, and all sections were fully represented. The only delegates not in attendance were those representing Alaska, the Isthmian Canal Zone, the Philippine Islands, and Puerto Rico.

Dr. Elliott P. Joslin, of Boston, was elected by the House of Delegates to receive the Distinguished Service Award of the American Medical Association.

Brigadier-General Fred W. Rankin of Lexington, Kentucky, the President, spoke of the role of the profession during mobilization. He spoke at some length of "mighty influences, * * * long forming * * * at work to effect epochal changes in the complexion of medical practice." He considered it quite apparent that the old system of medical practice will be considerably modified. He questioned whether "we have become languid and inelastic in our attitude and hesitant and fearful in our response to existing socio-economic developments." He said, "all efforts must be harmoniously combined and closely coordinated toward the elaboration of an intelligent program which will permit a democratic as well as a comprehensive medical service, with equally high professional and ethical standards." He spoke also of the importance of planning now for the post-war rehabilitation of physicians.

President-elect James E. Paullin, of Atlanta, Georgia, spoke in detail of the organization's influences during mobilization in planning war-time medical education and post-graduate study. He praised the efforts of the Board of Trustees on the planning of post-war medical services.

Among the distinguished guests addressing the House were Surgeon-General Norman T. Kirk, U. S. Army; George S. Morris, President of the American Bar Association; and Brigadier-General David N. W. Grant, Flight Surgeon, U. S. Army. The latter reported that there were 9,300 flight surgeons in the Army as compared to 97 eighteen months previous.

The signal activity of the Session concerned the introduction of seven separate sets of resolutions, looking toward the establishment of a Committee on Medical Service, several of them specifying the establishment of a Legislative Bureau of the Association in Washington, D. C. These resolutions resulted in the adoption of amendments to the By-Laws creating a Council on Medical Service and Public Relations, with duties as follows: "(a) To make available facts, data, and medical opinions with respect to timely and adequate rendition of medical care to the American people; (b) to inform the constituent associations and component societies of proposed changes affecting medical care in the nation; (c) to inform constituent associations and component societies regarding the activities of the Council; (d) to investigate matters pertaining to the economic, social, and similar aspects of medical care for all the people; (e) to study and suggest means for the distribution of medical services to the public consistent with the principles adopted by the House of Delegates, and (f) to develop and assist committees on medical service and public relations originating within the constituent associations and component societies of the American Medical Association."

The Board of Trustees submitted lengthy and comprehensive supplementary reports dealing with hospital corporations engaging in the practice of medicine, and the proceedings of the Joint Committee Meeting of the National Hospital Associations and representatives of the Board of

Trustees of the American Medical Association. An idea of the importance of this subject may be obtained from the remark of a delegate that the profession is in more danger of socialization through infiltrative practices of hospitals than through national legislation. In commenting on and recommending the adoption of these reports the Reference Committee said in part: "the factual data contained therein concern the whole future of the practice of medicine. Unless the medical profession as a whole is willing to devote at least the same amount of time and effort in studying the report and correcting the dangers pointed out therein as the Board of Trustees has in compiling it, then we might as well 'throw in the sponge' now and consent to the lay domination of medicine. That the Blue Cross plans to give medical service with or without the approval of the medical profession there can be no doubt after reading this report. * * * National approval or disapproval of any practice is a waste of time unless the state and county organizations will see that the dicta of the national body are carried out in the small localities."

Among the Reference Committee's recommendations should be mentioned, " * * * that hospitals should not be permitted to practice medicine. That the practice of radiology, pathology, and anesthesiology is the practice of medicine just as much as is the practice of surgery or internal medicine, and that it is just a short step from including the first three in a medical service plan to including the whole field of medicine in such a plan.

"That the public should be educated to realize that the hospital-created monopoly control of radiologic or any service as a source of profit beyond the normal provision for replacement, department development and proper proportion of over-all costs of operation of the hospital should not be permitted. * * *"

Significant of changing trends of thought was the action of the House of Delegates with respect to a constitutional amendment which had been proposed at the previous annual session and which would have taken voting rights from the 16 delegates of the respective Scientific Sections, making them mere liaison officers. The Reference Committee on Amendments to the Constitution and By-Laws recommended that the proposed amendment to the constitution be not adopted, saying, in part, "the adoption of this proposed amendment would be very unwise and essentially destructive, inasmuch as it would tend to change the character of the House of Delegates from a scientific body to a political and economic body. The American Medical Association is, and ought to be, a true composite of the entire medical profession of the United States." The proposed amendment to the constitution was not adopted.

Officers elected for the ensuing year were as follows: President-elect, Dr. Herman L. Kretschmer, Chicago; Vice-president, Dr. John W. Ames, Denver; Secretary, Dr. Olin West, Chicago; Treasurer, Dr. Josiah J. Moore, Chicago; Speaker of the House of Delegates, Dr. H. H. Shoulders, Nashville, Tenn.; Vice-Speaker of the House of Delegates, Dr. R. W. Fouts, Omaha.

San Francisco was chosen as the city in which to hold the 1946 annual session of the American Medical Association.

Final adjournment was declared on June 9th, at 12:05 P. M.

In conclusion, I wish to say that I am deeply

appreciative of the honor of representing our State Society at this Annual Session.

Respectfully submitted,

FREDERICK A. HEMSATH, *Delegate*

20—Report of the Representative to the Delaware Academy of Medicine

During the past year 43, or one-third of the membership of the Academy, entered the armed forces. To make up this deficit in income, the members remaining on the "home front" were asked to subscribe to the membership of one or more of their colleagues on the military front. This campaign resulted in about half of the absent members' dues being taken care of for 1943 by the men remaining at home.

During the year two scientific meetings were held, the first on April 28th, when Dr. William H. Gordon, U. S. Public Health Service, gave a very timely lecture on "Meningitis"; the second was held on May 21st, with Dr. J. A. Bargaen, Mayo Clinic, addressing the Academy on "Ulcerative Colitis."

At the annual meeting in February it was suggested that we inaugurate a series of Public Forums to which the public would be invited, and at which time questions could be submitted to a panel of doctors who would in turn answer and discuss the question. Two forums were held, the first on May 19th and the second on June 9th. These forums were very well attended and the public showed great interest in them.

No new volumes have been added to the Academy during the past year. The Library is now open on a part time basis, from ten to one o'clock each day, but at other times the telephone is covered by the Physicians' Exchange.

Respectfully submitted,

W. OSCAR LAMOTTE, *Representative*

21—Report of the Nominating Committee

Officers

First Vice President—W. Edwin Bird, Wilmington.

Second Vice President—William C. Deakyne, Smyrna.

Secretary—W. Oscar LaMotte, Wilmington.

Treasurer—Douglas T. Davidson, Sr., Claymont.

Councilor—Joseph B. Waples.

Standing Committees

Scientific Work—W. Oscar LaMotte, Wilmington; Henry V.P. Wilson, Dover; Erwin L. Stambaugh, Lewes.

Public Policy and Legislation—Joseph S. McDaniel, Dover; Emil R. Mayerberg, Wilmington; James Beebe, Lewes.

Publication—W. Edwin Bird, Wilmington; M. A. Tarumianz, Farnhurst; W. Oscar LaMotte, Wilmington.

Medical Education—M. A. Tarumianz, Farnhurst; Cecil J. Pickett, Smyrna; Oliver B. James, Milford.

Necrology—Dorsey W. Lewis, Middletown; Isaac J. MacCollum, Wyoming; Ulysses W. Hocker, Lewes.

Delegates

A. M. A. Delegate—James Beebe, Lewes.

A. M. A. Alternate—Clyde C. Neese, Wilmington.

Del. Acad. of Med.—W. Oscar LaMotte, Wilmington.

State Board of Medical Examiners

J. S. McDaniel, Dover; Wm. Marshall, Milford; W. E. Bird, Wilmington; W. T. Chipman, Harrington; P. R. Smith, Wilmington; J. R. Elliott, Laurel; N. W. Washburn, Milford; L. J. Jones, Wilmington; C. J. Prickett, Smyrna; C. H. Davis, Wilmington.

INTER-AMERICAN COOPERATION IN HEALTH WORK

(Continued from Page 170)

battle against disease and hunger is essentially the apparatus of peace. Hospitals and training schools, doctors and nurses these represent progress toward the human goals of peaceful, happy peoples. Through mutual aid, the Americas are learning how to multiply hospitals, and training schools, doctors and nurses. Inter-American cooperation in this work is one of the best assurances that we will realize the better world for which we fight.

MISCELLANEOUS

Hospitals in the Practice of Medicine

For some time the entry of hospitals into the practice of medicine by the routes of radiology, pathology, and anesthesiology has been engaging the attention of physicians, who almost unanimously oppose it.

The House of Delegates of the A.M.A. in its 1943 session approved the following resolution with the reference committee (Dr. Louis H. Bauer, chairman) commenting:

"It is high time that the subject be taken seriously, not just for the duration of the meeting of the House but for the other 360 days of the year.

"Your Reference Committee, therefore, recommends:

"A. That the House emphatically reiterate that it disapproves the injecting of a third party into the personal relationship of the patient and the physician, and that hospitals should not be permitted to practice medicine.

"B. That the practice of radiology, pathology and anesthesiology is the practice of medicine just as much as is the practice of surgery or internal medicine, and that it is only a short step from including the first three in a medical service plan to including the whole field of medicine in such a plan.

"C. That the public should be educated to realize that the hospital-created monopoly-control of radiological or any service as a source of profit beyond the normal provision for replacement, department development, and proper proportion of overall costs of operation of the hospital should not be permitted. Nor can the hospital rightfully use per diem charges against all of the hospital patients to support a radiological or other department devoted to creating bargains in

radiological or other services in order to make hospital group insurance more attractive. To permit either will result in decrease of the quality of service and increased cost to the patient.

"D. The medical profession must watch with care all proposed plans for medical service and endeavor to prevent the acceptance of any plan which includes medical service under the control of the hospital.

"E. The effectiveness of this program can be attained only if state and county medical societies use their influence on hospitals in their respective localities, and exercise control over the local members of the medical profession.

"F. The public must be educated on what it will mean to them in the way of inferior medical care if these dangerous trends are not curbed.

"G. In the relationships of the medical staff and the board of directors of a hospital there should be no intermediary. The staff should have direct access to the board.

"H. The board of trustees should continue their conferences with national hospital associations and should also endeavor to enlist the support of special medical organizations in education both of the profession and of the public."

The House also adopted the following recommendation:

"Your reference committee recommends that the House of Delegates of the American Medical Association urge the American Hospital Association to withhold approval of the uniform comprehensive Blue Cross contract proposed by the Hospital Service Plan Commission of the American Hospital Association, which includes certain medical services as a part of hospital care and which, if adopted as recommended by the said commission, would virtually compel the addition of medical services to the benefit of those Blue Cross plans and not accede to the demands of the American Medical Association by confining their benefits to hospital service."

It is indeed high time that these matters were taken seriously by the profession and by the public, for consideration of the greatest moment are involved. The hospital has come to be the focus of the public practice as well as of some portion of the private practice of medicine. It is the point at which the *industrialization* of medicine, if we may be allowed the use of that term, has, in part, taken place. It is the point at which the practice of medicine in many of its branches has become, for economic reasons, fixed, tied inevitably to a capital structure sometimes of enormous proportions, a corporate business. It is the point at which hospital service plans and medical service plans converge. Physicians are related to it sometimes as free and independent users of its facilities, sometimes as paid employees of the hospital corporation so that many facets of contractual relations are involved.

Says the A.M.A., editorially, of the significance of radiologic practice in the new forms of hospitalization insurance and routine hospital service:

"Doubtless few of those who obtain the services of radiology in hospitals realize that in many institutions the radiologist is working for a small salary and the hospital is deriving a considerable profit from his professional practice. In other institutions what amounts to virtual fee splitting between the hospital and the radiologist is routine technic.

"Certainly it is not to the interest of the patient, who must be given first consideration, that the necessity for radiologic study of his case should be made the occasion for providing excess income for the hospital. If the trend is to be controlled, every new arrangement between a hospital and radiologist and every new plan for a prepaid medical service should be carefully scanned by the county medical society in the area concerned to determine whether or not it violates the fundamental tenets that have been so often iterated and reiterated by the House of Delegates of the American Medical Association.

"The danger to the sick does not lie in the collection of income for the hospital or the radiologist; it is in the inevitable determination that must come in any form of medical service when its practitioners are placed on a basis in which the quality of the service rendered is secondary to the price charged or the method by which the service is supplied."

What is true of radiology is equally true of anesthesiology and pathology. Condemnation by the profession of the practice of selling medical service by hospitals has not by any means stopped the practice. It has been alleged that the "Blue Cross" plans to give medical service with or without the approval of the medical profession. The Associated Hospital Service of New York City is said to state plainly "the intention and the conditions under which services will be rendered."¹

These are matters of grave import. They cannot be settled by wishful thinking. Cost of medical and hospital service to the public is involved, as well as the quality of medical service. Whatever is for the best interest of the patient should govern and will probably do so in the long run if the counsel of the profession is heeded. It has not always prevailed in the past. In the present there seems to be a tendency to brush it aside as outmoded. Perhaps reasonable counsel will prevail eventually.

Edit., *N. Y. St. J. M.*, Sept. 15, 1943.

Hitler and Mathematics

In 1926 the International Education Board, founded by Mr. John D. Rockefeller, Jr., made an appropriation of \$275,000 to the University of Gottingen in Germany to build and equip a Mathematical Institute. For many decades Gottingen had been an important mathematical center, but the first World War left it impoverished. The new funds in 1926 enabled it not only to add to its physical facilities for mathematical research but to strengthen its already brilliant faculty. In a few years Gottingen became the world's chief center for advanced study in mathematics and physics, and its students arrived in increasing numbers from many countries.

Then the Nazi regime took over Germany, and its effect on Gottingen was drastic and immediate. The Jews on the faculty were thrown out, and their colleagues of Aryan stock, shocked by this intolerance and unable to live in the stifling intellectual atmosphere, resigned. By 1939 only one of the original faculty remained active at the Institute. Most of the others came to the United States.

In view of what has happened in the last few years it seems ironical that this German institution was brought to maturity by American funds. An even deeper irony lies in the fact that the blind fanaticism of the Nazis succeeded in driving to America some of the world's leading mathematicians. There appears to be a universal principle about intolerance: it reacts on those who practice it. Just as many countries were enriched by the Huguenot immigration that followed the revocation of the Edict of Nantes, so the United States and England have greatly profited by the scholarship driven out of central Europe through the self-defeating bigotry of Nazi ideology.

If Hitler had set out, with benevolent intent, to build up America as the world's great mathematical center, he could hardly have achieved more successfully the result which his ruthlessness has accomplished. During the last decade 131 leading European mathematicians have migrated to the

United States. Of these, 16 came from the faculty of Gottingen. The School of Advanced Study at Princeton, Brown University, New York University, Harvard, Chicago, the University of Wisconsin, the Massachusetts Institute of Technology are only a few of the American institutions which have profited by this migration.—*The Rockefeller Foundation Review* for 1942.

Look to your health; and if you have it, praise God and value it next to a good conscience; for health is the second blessing that we mortals are capable of; a blessing that money cannot buy.—Izaak Walton.

OBITUARY

HOMER FOREST WONDERS, M. D.

Dr. Wonders, prominent eye surgeon, of Merion, Pa., died suddenly while on vacation, in the Presbyterian Hospital, New York, on August 27, 1943, of a cerebral hemorrhage, aged 66 years. From 1914 to 1942 Dr. Wonders practiced ophthalmology in Wilmington, maintaining offices in the duPont Building. From 1914 to 1918 Dr. Wonders maintained his residence in this city at 701 W. 23rd Street, following which he removed to Philadelphia, with offices in the Medical Arts Building, and a residence at Merion.

Dr. Wonders was born in Uniontown, Pa., in 1877, and graduated in medicine at the Medico-Chirurgical College of Philadelphia in 1907. Following an internship in Philadelphia, he began his practice in eye, ear, nose and throat diseases in Uniontown, Pa., in 1909, and located in Wilmington in 1914, where he soon built up a very large and lucrative practice. In 1918 he succeeded to the practice of the late Dr. Wendell Reber, of Philadelphia, thus making his office in Wilmington his secondary office.

Dr. Wonders was an oculist of great diagnostic ability and of exceptional surgical skill. After the removal of his offices to Philadelphia a large majority of his Delaware patients followed him there.

Dr. Wonders was a member of the Philadelphia County Medical Society, the Medical

Society of the State of Pennsylvania, the American Medical Association, and the International College of Surgeons. He also was a member of the Union League of Philadelphia, the Merion Club, and the Overbrook Presbyterian Church. Further, he was a member of Eureka Lodge, No. 23, A. F. and A. M., in Wilmington, of the Delaware Conistory, and of LuLu Temple, A. A. O. N. M. S., Philadelphia.

Dr. Wonders is survived by his widow, Mrs. Irma LaRoche Wonders.

Funeral services were held at his late home, 723 South Latches Lane, Merion, on August 31st, in charge of the pastor of the Overbrook Presbyterian Church. The interment was private.

BOOK REVIEWS

Collected Papers of the Mayo Clinic: Volume 34, 1942. Edited by Richard M. Hewitt, M. D., et al. Pp. 999, with 175 illustrations. Cloth. Price, \$11.00. Philadelphia: W. B. Saunders Company, 1943.

This latest Mayo Volume contains 513 articles, of which 77 are in full, 106 in abstract or abridgement, and 330 by title only. The subject matter covers almost the whole range of modern medicine and surgery and is aimed especially at the general practitioner, the diagnostician, and the general surgeon. Of timely and general interest is the section on "Recent Advances in Chemotherapy," which contains 158 pages of excellent material. Of great value also is Alvarez' paper on "Constitutional Inadequacy," not only for its medical common sense but for its common sense economics.

This volume easily maintains the expected standards of the Clinic whence it comes; its success should equal that of its predecessors.

Gastro-Enterology (in three volumes). By Henry L. Bockus, M. D., Professor of Gastroenterology, University of Pennsylvania Graduate School of Medicine. Vol. 1—The Esophagus and Stomach. Pp. 831, with 134 illustrations. Cloth. Price, \$35.00 the set. Philadelphia: W. B. Saunders Company, 1943.

The author states his purpose to be to record systematically the general knowledge in this specialty. Even a cursory examination of this book shows that he has accomplished

his purpose, and a detailed examination shows that he has done it excellently. Of special excellence are the chapters devoted to peptic ulcer, where his large experience and sane judgment are outstanding. His critical evaluation of the statistics of others and his honesty and modesty in the evaluation of his own statistics merit the widest emulation.

This volume, the first of three, is uniformly good. While not claiming to be exhaustive, it is almost that; it is intensely practical, and it is definitely authoritative. A book to be heartily recommended, we await its two sisters with great expectations.

Geriatric Medicine: Diagnosis and Management of Disease in the Aging and in the Aged. Edited by Edward J. Steiglit, M. D., Consultant in Gerontology, National Institute of Health. Pp. 887, with 187 illustrations. Cloth. Price, \$10.00. Philadelphia: W. B. Saunders Company, 1943.

It has been well stated by the editor that the care of the aging and the aged must include all fields of medical practice applied to those individuals past the prime of life. Of all the problems discussed those concerning nutrition and cardiovascular renal disease are of outstanding importance, and the chapters thereon are of outstanding merit.

Longevity on the one hand and disease on the other are in no small part determined by heredity, but there is much that can be done for those individuals who have passed the prime of life to make their declining years more pleasant and comfortable. This treatise outlines, in an excellent manner, what can be done and how.

It has only been within recent years that the field of geriatrics has developed to the point where a separate treatise was justified. Now there are several texts on this subject, but in the opinion of this reviewer Stieglitz' book, written by a number of outstanding authorities, is the masterpiece.

Release From Nervous Tension. By David H. Fink, M. D. Pp. 232. Cloth. Price, \$2.00. New York: Simon and Schuster, 1943.

The author, a psychiatrist, has written this book for the layman. It is practical and informative, and aims at the relaxation of the tense patient. We found the book quite interesting and believe it may be helpful to many sufferers.

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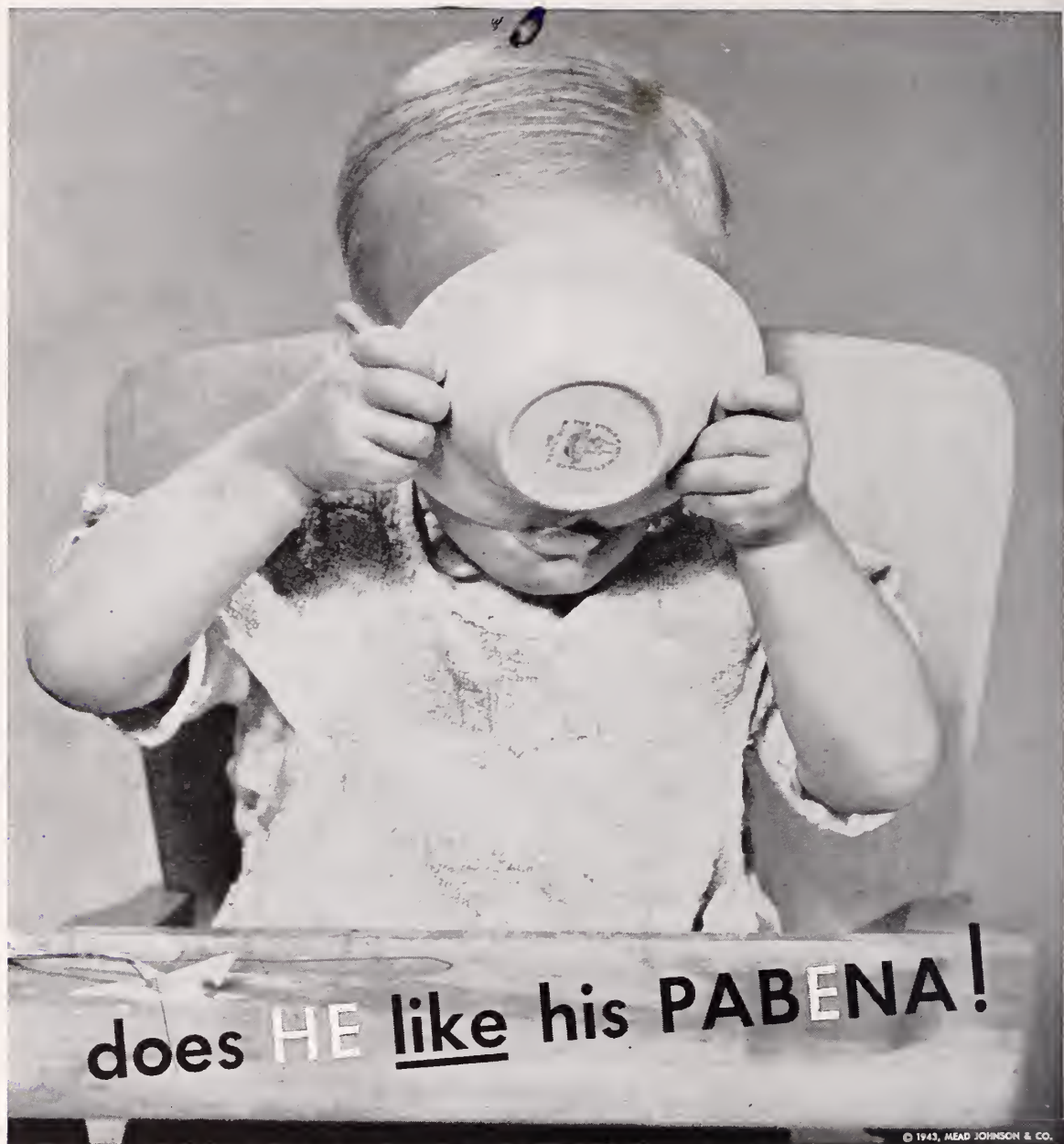
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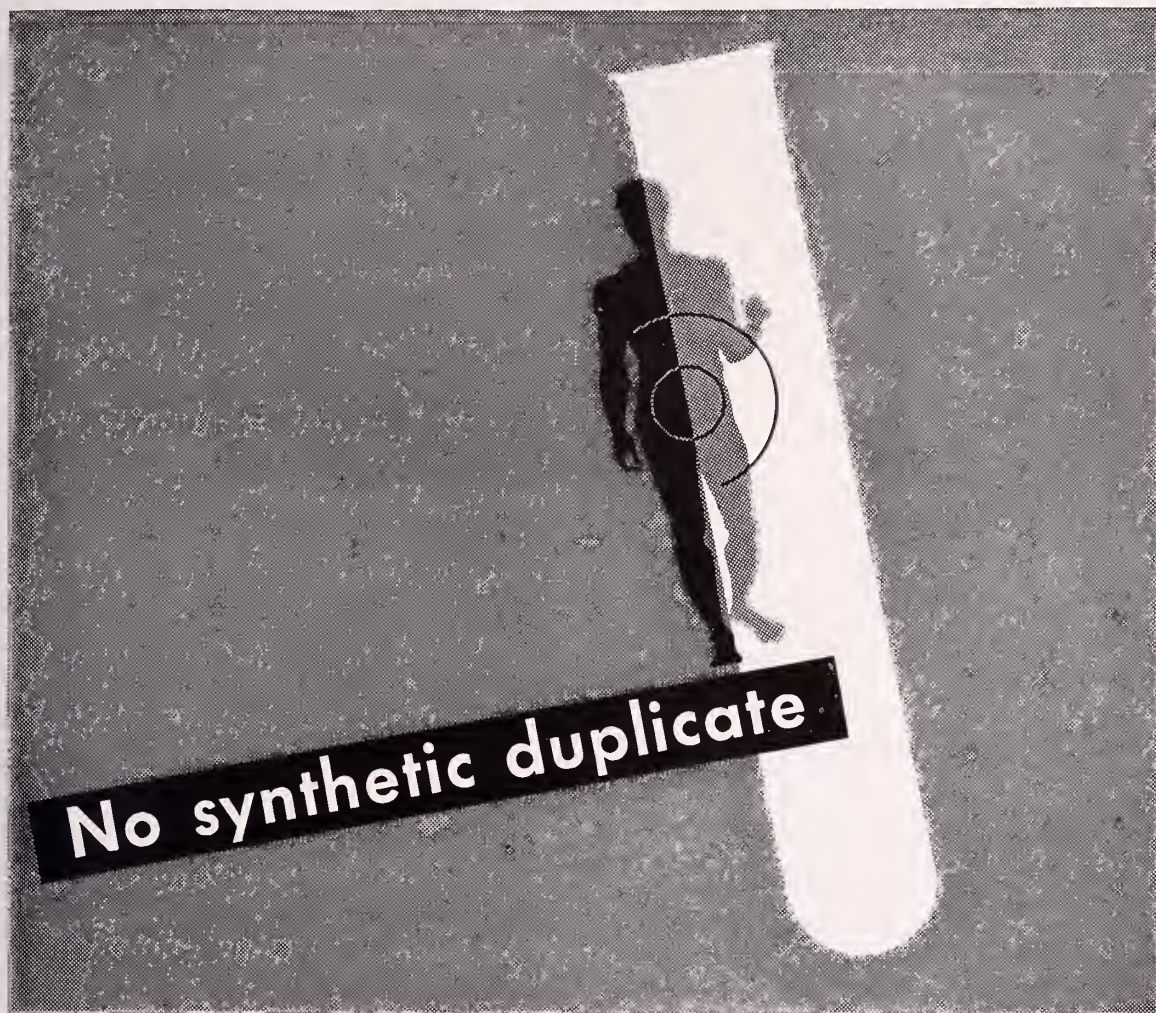
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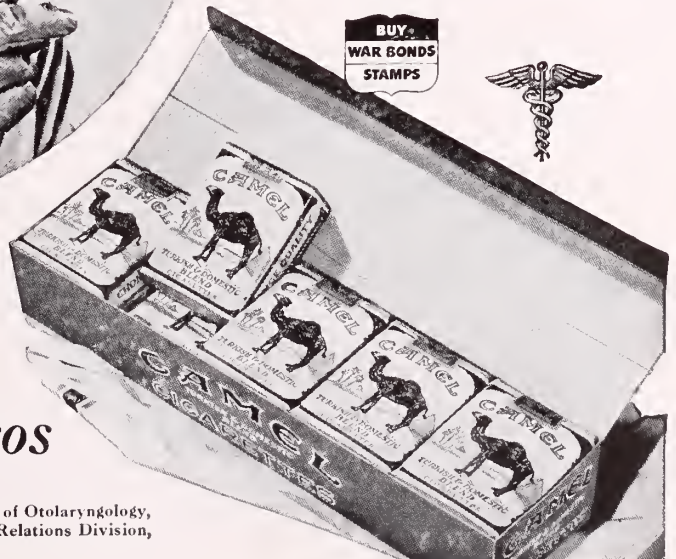
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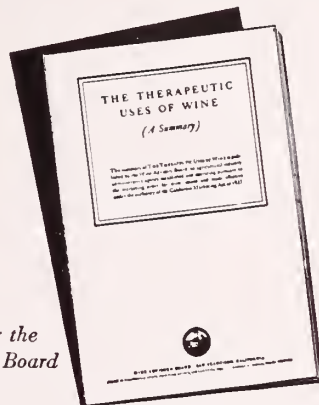
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AN entire generation of physicians lost touch with the medical lore of wine in the United States following the first World War. Actually, however, few other substances have been as widely recommended. This monograph, which summarizes the pertinent scientific literature in the interest that fact be separated from folklore by the application of impartial analysis, will prove of interest and value to specialists in many fields, and to the general practitioner as well.

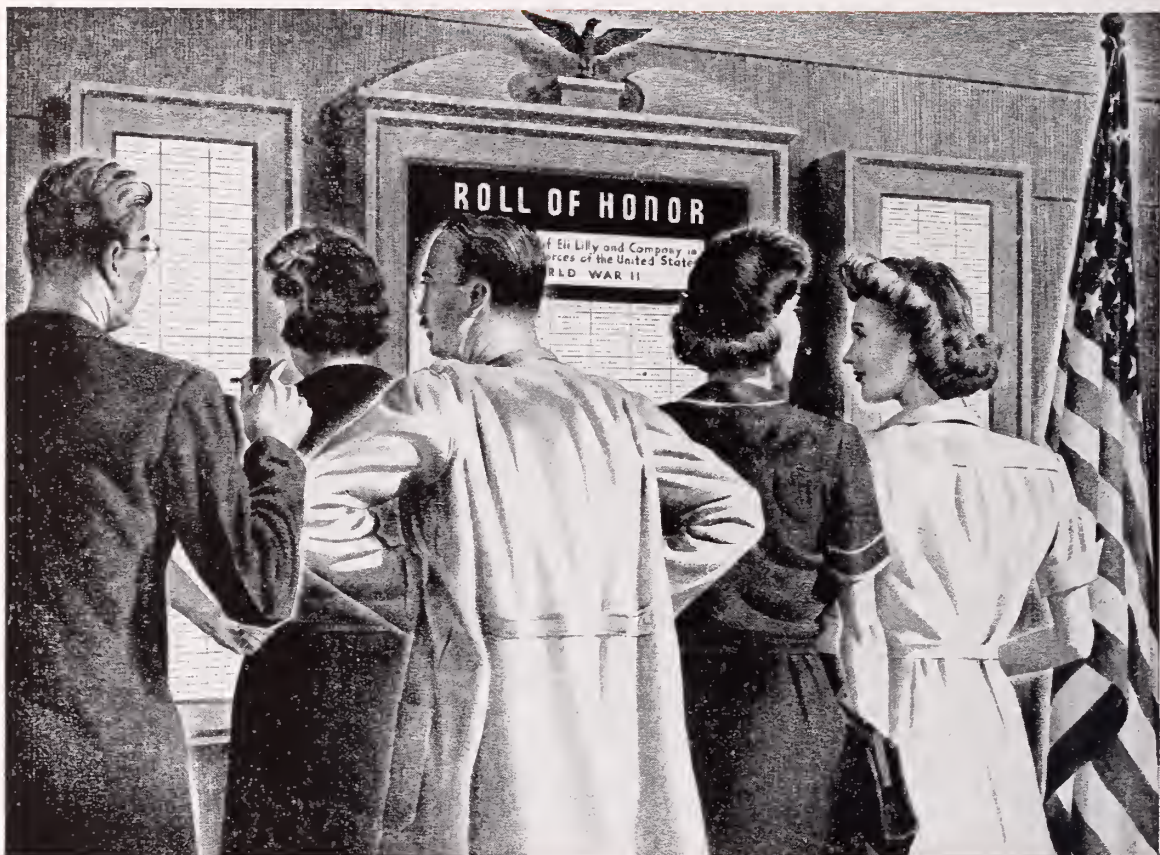
A section on wine as a food is included. The actions of wine on the gastro-intestinal system, the cardio-vascular system, the genito-urinary system, the nervous system and the muscles, and the respiratory system are discussed. The uses of wine in diabetes mellitus, in acute infectious diseases and in treatment of the aged and convalescent are dealt with. There is a section on the value of wine as a vehicle for medication. Also an important section on the contraindications to the use of wine. Those who wish to pursue the subject further will find an extensive bibliography.

This review results from a study supported by the Wine Advisory Board, an agricultural industry administrative agency established under the California Marketing Act, and has been sponsored by the Society of Medical Friends of Wine.

Members of the medical profession are invited to write for this monograph. Requests should be made to the Wine Advisory Board, 85 Second Street, San Francisco.



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THE RESPONSIBILITY AND FUTURE OF ORGANIZED MEDICINE*

LAWRENCE J. JONES, M. D.,
Wilmington, Del.

The medical profession is vitally concerned in the social plans for post war reconstruction, especially as they pertain to our own field of endeavor. Unless we actively participate we may well see a plan similar to the Beveridge of England put into effect, wherein the physician is the servant of the state and the practice of medicine becomes just another chapter in history.

The first concern of organized medicine is to give to the patient the best possible care. We have endeavored to maintain a high standard of public health. We have diligently worked for the advancement of scientific medicine and have far outstripped those countries in which medicine is controlled by government.

It is also the duty of organized medicine to lead the way to any improvement in medical service that is needed. Only by doing this can we prevent undesirable and inefficient social changes from being brought about under the pretense of a medical emergency. Only in this way can we keep the federalization of medicine from becoming an actual fact under the guise of national defense.

We must expand our efforts to educate the public. As Dr. William J. Mayo said "How can laymen be expected to accept (wise) legislation for the regulation of medical practice when most of the information they receive about medical matters comes to them from the advertisements of patent medicine vendors and voluble charlatans?" They might accept such legislation for medical regulation, it is true; but unless they are informed they will accept it in ignorance and with lasting regret.

We must keep our legislators informed about our beliefs and about our wishes. We must give whole hearted continuous support to the National Physicians' Committee, whose members are urging us to indoctrinate our congressional representatives against all ill-considered schemes which must lead to unfortunate innovations. Every physician should acquaint himself with the splendid work this committee is doing and render both financial and moral support in this crusade to save the medical profession and protect the public from regimented medicine.

During the past year, before a United States Senate Committee, a bill to grant federal funds to help states run the secondary schools was under discussion. The bill contained a provision for complete physical examinations of one-third of all high school students at a fixed fee of one dollar and twenty-five cents. One Senator objected to this war time federal help because of the likelihood of it being continued in time of peace. He also took the stand that if one-third of these students were to be examined, why not all of them, why not all grammar school children as well and why not the families of all of these groups. He saw quite clearly how an apparently well meant war time measure might easily lead to complete state medicine.

What then is the future of medicine? Will it be socialized medicine? Why should radical changes be made in our present method of practice? We are told that after the war, there will be countless individuals who will have to be provided for, both medically and otherwise, by the state. With a tremendous accumulation of savings and an abundant supply of physicians in the post war period, there is room for argument as to this need, but we are agreed that all persons shall have good medical care.

During the years since the depression, several plans have been put into operation, all

* Presidential Address, delivered before the Medical Society of Delaware, Wilmington, October 12, 1943.

of them being an attempt to solve this problem. In some states there are already two forms of prepaid medical care. One is the agricultural worker's health program, financed entirely by the federal government, but with the services rendered entirely by the practicing physicians in their communities. Another plan operating in some states is the physicians service, which makes available, on a voluntary basis, a complete health and hospital service to employed groups in industry. It is thought that some overlapping of these two extremes may be worked out so long as the physicians are permitted to direct and control the standard and quality of medical service.

Here in Delaware, our own Group Hospital Service is now in its ninth year of successful operation. During this time, with the cooperation of Delaware physicians and industry, the Plan has flourished to the extent that it has added periodically to the service rendered its membership. This last summer has seen the successful inauguration of a surgical service, sponsored by the physicians of Delaware. Reception of the new service has been most enthusiastic and the acceptance of coverage by approximately 10,000 people in a space of six months is an encouraging example of the enthusiastic acceptance on the part of the public of a voluntary, physician and hospital sponsored project.

It may interest you to know that the Board of Trustees of Group Hospital Service had more than this initial venture in mind when the Plan was originally contemplated. It is the hope of these able business men, with physician cooperation, that surgery will be only the first step in a program of complete medical and dental service to be provided the citizens of Delaware on a voluntary pre-payment basis. This, with a plan now contemplated to provide for the enrollment of individuals, will make adequate medical and dental service available to the bulk of our State population. For those on marginal income levels, the solution is that recommended by the American Hospital Association in its Bishop Resolution; that the Federal government provide grants-in-aid to the states

for care of such low income groups. This, with a plan such as our own, is the rational and happy solution to reaching all Americans with adequate medical and hospital care.

What can we, as an association, do to combat this very definite trend that faces us? Some say it is already too late to do anything, that the government is all set to take over medicine. Many of us do not agree with such a defeatist attitude. We owe more than that to the medical public and to ourselves. We should do everything possible to maintain private medical practice. The great majority of citizens are able to finance their medical needs and they really want to do just that. For the remainder (a group which is not a large percentage of the population), we will work out the best plan, be it prepayment or county or state plan. It could be under the direction and control of physicians. It should permit full free choice of physicians by patients wherever possible. It should have few restrictions thrown up about its operation. It should, finally, not materially change the practice of medicine as we know it.

THE VALUE OF STUDIES OF THE CIRCULATION*

JOHN H. FOULGER, M. D.**

During the last few months, a number of interesting books have appeared on the subject of psychosomatic medicine†. These books are significant because all deal with a type of patient, who fails to conform to, and therefore to whom we cannot apply our standard techniques of diagnosis. Such patients are sick and show little pathology. They may die, and the autopsy may give no information. They comprise a large proportion of those who need medical attention, and the strain of war on both military and home fronts is likely to increase their number; therefore, we cannot neglect them. Rather should we give a little thought to the adequacy of present methods used in diagnostic medicine.

* Read before the Medical Society of Delaware, Wilmington, October 12, 1942.

** Director, Haskell Laboratory of Industrial Toxicology, E. I. du Pont de Nemours and Company.

† They include *Emotion and Bodily Changes*, 2nd Ed., Dunbar, Columbia University Press; *Psychosomatic Medicine*, Weiss and English, W. B. Saunders Company; *Nervousness, Indigestion and Pain*, Alvarez, Hoeber.

Ethnologists tell us that simplicity is a sign of progress in the development of language. If the same rule holds for all fields of human endeavor, can we conclude that we are progressing in the practice of medicine? Our zeal for so-called "scientific diagnosis" has piled up an ever-growing list of "must" procedures—serological, biochemical and physical laboratory tests. We seem to feel deficient if we neglect to run through the whole gamut of these tests at every opportunity, and in grave error if the results do not appear on each record. But most of us will probably admit that accumulated results of laboratory tests are frequently indigestible and even unintelligible.

This situation is probably due to confusion between the meanings of the terms "scientific" and "technological." The tests themselves and their data are merely technological. It is the proper application of laboratory tests, the logical analysis and use of the data which they give, which is scientific. There is nothing scientific in the mere accumulation of indigestible data.

The patients with whom we are concerned in the field of psychosomatic medicine are the despair of the technological diagnostician. They do not suffer from any specific infection or trauma, but rather from the pressure of their environment. We can benefit them only by considering them with their environment. We must, therefore, replace the study of pathology by that of biology. Scott Williamson¹ has defined pathology as "the study of the organism on the defensive, or more correctly, in escape—running away from living so as to insure survival"; and biology, as the study of "the organism actively embracing the environment, that is, in health." We can efficiently study patients who are just across the border from good health only by gaining information on those factors which make for good health.

Two basic systems conserve life in man as in all higher organisms, the respiratory and the circulatory systems. They are not independent, but are closely linked in operation. A child is born alive into this world when, to a circulation acquired from its mother, it adds active respiration. Man dies when both respiration and circulation cease.

If one of the two is deficient, artificial means can often restore it if the other is intact. In most cases it is easier to restore a failing respiration than a failing circulation.

Strangely enough, even textbooks of physiology give more time to abnormalities of parts of the circulatory system, the heart and the peripheral blood vessels, than to discussion of the normal circulation as a whole. We have a national heart association interested in the specialty of cardiology. In recent years it has established a section for the study of peripheral circulation. The heart and peripheral blood vessels are only part of the circulatory system. We have, as yet, no society for the study of the circulation as a whole.

Our own interest in this subject came from attempts to devise methods for frequent examination of industrial workers. Our aim was to prevent illness from exposure to chemicals by detecting early departures from usual health which those chemicals might produce. This was only possible when our methods of examination were so simple and brief that they could be used frequently in industry without leading to great loss of working time. After several years of observation and laboratory experiments we formulated a general plan of physiological trends which appear to follow exposure to every chemical which we have studied, and which is involved also in the development of illness from inadequate nutrition or disease. This scheme is shown in Fig. 1.

The diagram is divided into two main regions—the left, the range of efficient preventive medicine; the right, the range of diagnosis and pathology. The central point of the left-hand region is "histo-toxic anoxia," that is the degree of reduction of the oxygen supply to the tissues, which leads to poisoning of those tissues. When this situation arises from any cause, the tissues can go through two definite stages. First, there is an initial irritative stage in which their activities are increased. If the poisoning goes beyond this, they reach a depressed stage, with reduction or actual loss of activity. The individual tissues of the body and the organs of which they form part are not equally susceptible to lack of oxygen. Some respond

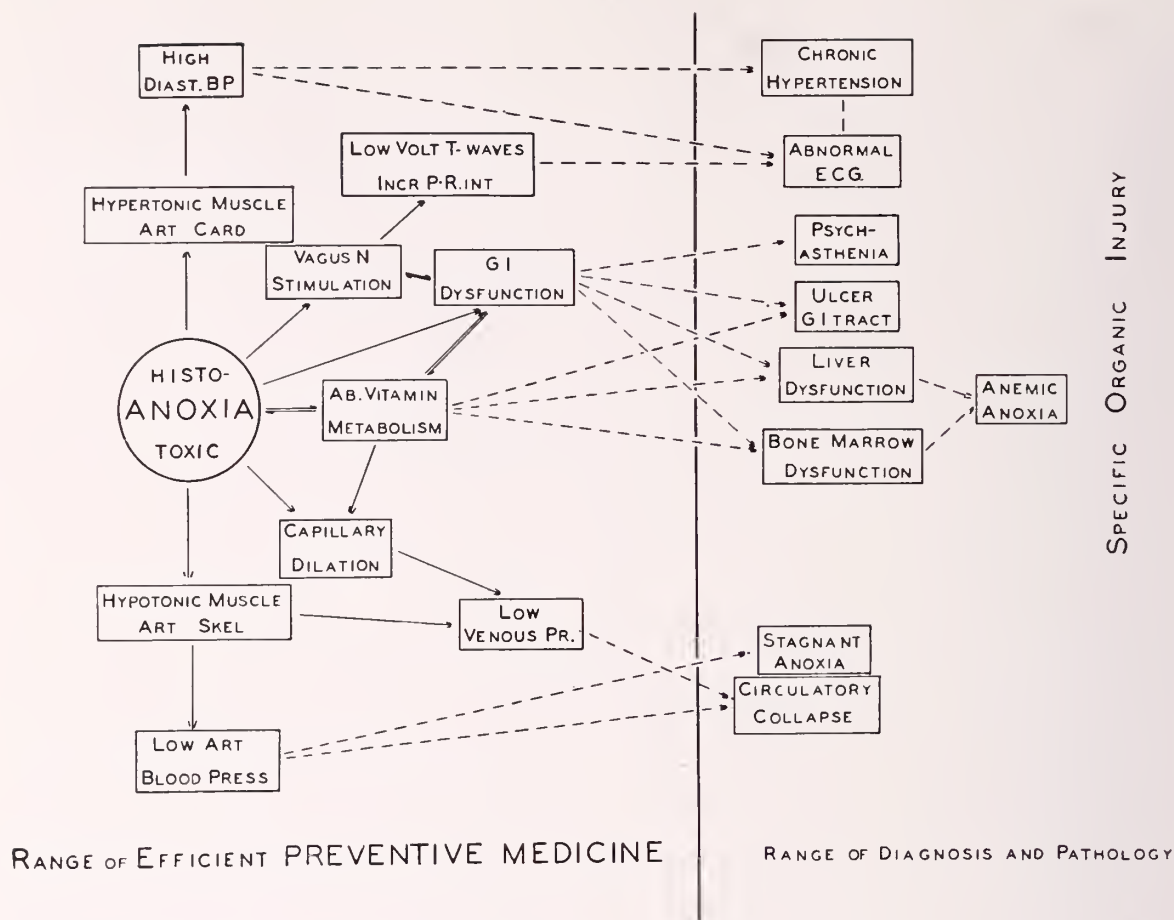


FIG. 1—Diagram showing early stages of physiological action of toxic chemicals, disease, malnutrition, therapy, etc., and relationship of these early stages to pathological states.

more rapidly than others. These are the systems which are highly essential to the conservation of life. Those regions of the brain, which include the hypothalamus and the nerve centers of the medulla oblongata are probably most susceptible to deficiency of oxygen and most easily forced into the irritated stage. A whole train of symptomatology and signs may follow. The symptoms include (and these we find in the early stages of most diseases, as well as of all chemicals which we have studied):

Unusual fatigue or lassitude

Headache

Dizziness

Gastro-enteric disturbances (nausea, loss of appetite, fullness of the stomach, frequent eructations, uneasiness or pain in the epigastrium)

Palpitation.

The signs include:

Definite trends of blood pressure away from usual limits (especially trends of dias-

tolic blood pressure and pulse pressure), and obvious tremors in the extremities. The most important changes occurring are shown in the range of efficient preventive medicine. All of these symptoms and signs are not necessarily present in each case.

When the degree of anoxia is sufficient to produce the irritative stage, we observe hypertonus of musculature, both skeletal and arterial, leading, among other things, to an increased diastolic blood pressure. If this continues, the diastolic blood pressure may reach ranges which are distinctly abnormal for the posture of the patient. For instance, when measured in the sitting position, diastolic blood pressure may go beyond 90. If this situation is allowed to persist, diastolic blood pressure may become fixed at levels above 90, and later in the history of the patient, the systolic blood pressure also will rise, leading eventually to systolic and diastolic hypertension. If the degree of deprivation of oxygen is such as to produce the de-

pressed stage, there is hyptonous of the musculature, and with it low arterial blood pressure—first, a fall in systolic pressure with a diminution of pulse pressure, and later a drastic fall in diastolic pressure. Finally, systolic, pulse pressure and diastolic pressure may all reach definitely unusual limits, and the patient may collapse.

Even in the extreme condition of collapse, all of these changes are functional. If detected quickly enough, there need be no organic injury, but if they are allowed to continue, as in the case of the high diastolic blood pressure mentioned a few moments ago, there can be definite organic injury, and we pass out of the range of efficient preventive medicine into the range of diagnosis and pathology.

Since we are interested in setting up a

system of preventive medicine, it is obvious that the only change shown in this scheme, which, at the present time is subject to easy measurement, is a change in blood pressure. Therefore, our system of examinations is based upon a standard measurement of blood pressure, and the assignment of a score to each record. This score changes under conditions of incipient ill health produced by exposure to chemicals, by malnutrition, by disease or by these and other factors all acting together.

The method of determining the score is shown by Fig. 2. In our routine measurement of blood pressure, we make readings on both arms, and record the diastolic blood pressure at both levels (the change in sound and the disappearance of sound). In our routine calculation of blood pressure scores,

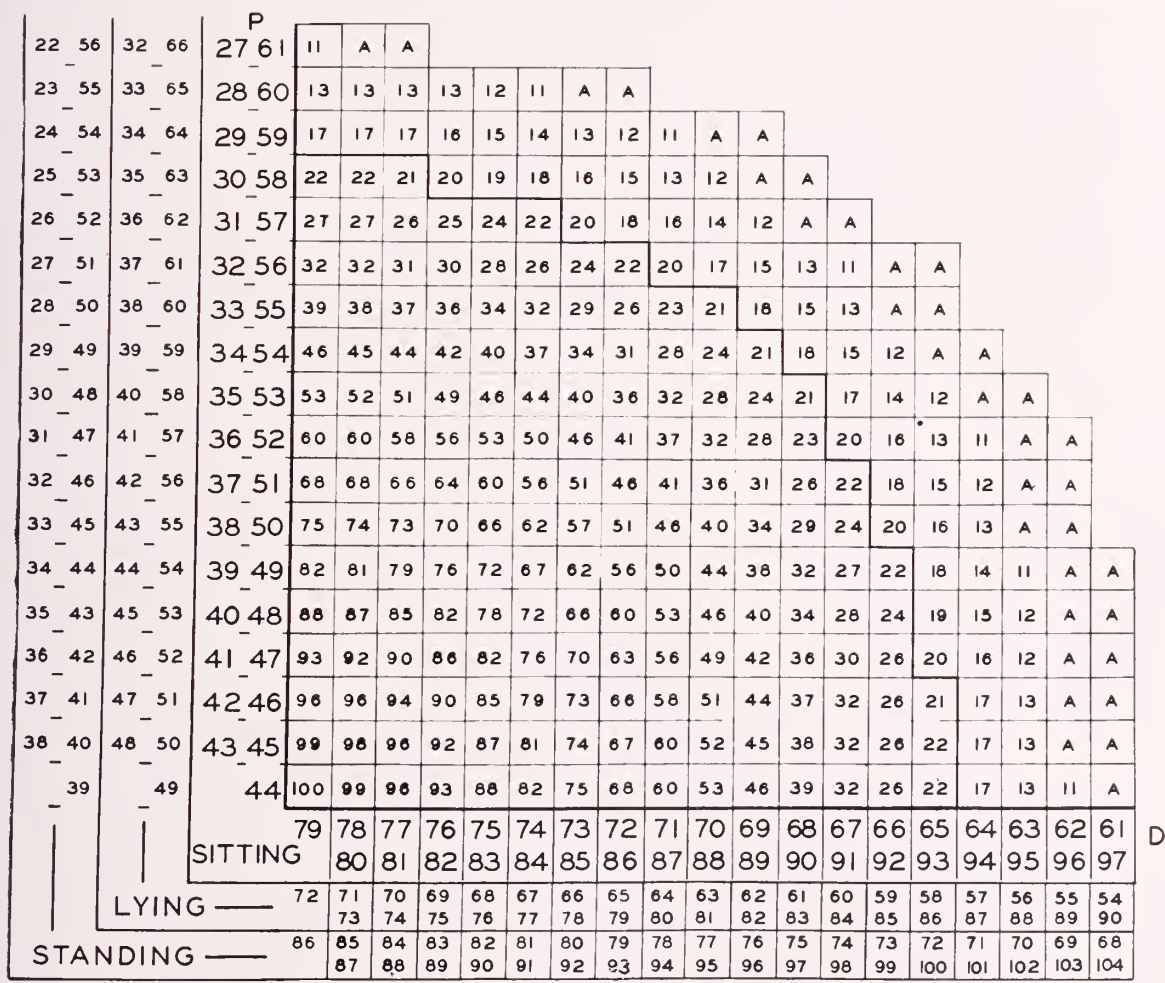


FIG. 2—Chart for colculotion of score for diostolic and pulse pressure readings, for sitting, lying and standing positions. Read the diostolic blood pressure on the horizontal axis, and the pulse pressure on the vertical axis. Find the intersection of these two. The figure in the square at the intersection is 100 times the score.

we take the arithmetic average of systolic pressures, and the diastolic pressures at the change of sound on the two arms, and from these calculate the average pulse pressure. Our score is derived from pulse pressure and diastolic pressure, and is based upon the probability of deviations of these two values from the means established for a large population. Thus from Fig. 2, if the average of the blood pressure of the two arms is 123/84, which gives a pulse pressure of 39, we find the figure 39 on the vertical axis under P, and 84 on the horizontal axis, and find the point at which the two meet. At this point the reading is 67. The blood pressure score is 0.67.

In normal individuals, the score varies between 1.0 and 0.11. We know by experience that a normal individual will not show a score of 0.1 or less in more than 6% of a very large number of examinations. Therefore, in studying each man's record, we can determine whether or not he shows more abnormal blood pressure scores than he would be expected to show by pure chance in the number of examinations in his record. In addition to the occurrence of definitely abnormal blood pressure scores, we can use a downward trend of the blood pressure score as a sign of development of unusual physiology.

By this scheme we have collected a mass of information on blood pressure, and its analysis has led to very interesting facts.

Continued study of working groups shows that while a majority of workers may show fluctuations of their blood pressure score, a certain proportion, in some cases 20—40% of the group, are frequently giving unusual scores. These men are, in general, more sensitive than their fellows to the action of chemicals, but this increased sensitivity can be traced to situations and habits lying entirely outside of the working environment. We have, then, a group of individuals who appear sickness-prone, analogous to the accident-prone workers about whom we hear so much. Perhaps the two groups are really the same. Certainly, as Figure 3 shows, the hourly trend of occurrence of abnormal blood pressure is almost parallel to the known hourly trend of non-fatal accidents.

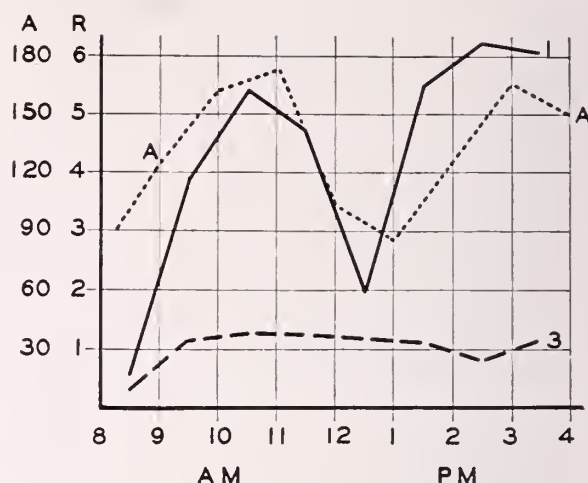


FIG. 3—The hourly trend of
Dotted line A—Non-fatal accidents. (Chemical industries in Pennsylvania, 1940).
Full line 1—Rotio $R = \frac{\text{Observed}}{\text{Expected}}$ number of Crompton test records with values 30 or lower.
Broken line 3—Value of R during 6 months of treatment with 100 mg. ascorbic acid per day.

Since the underlying defect in these people is not produced by their industrial environment, they are your patients rather than the patients of the industrial physician. You will recognize them, and perhaps their families. They include the one who is always nervous and tired, the one who suffers from gastro-intestinal disturbances on the slightest pretext, the patient who comes to you usually with a relatively mild respiratory infection, but who you feel is much more sick than that infection warrants. They include the patients or families who always seem to have "hard luck," are frequently the victims of accidents. Since we can pick them out in industry with a fair degree of success by our studies of circulation, it might well be that the results of our studies will help you in diagnosing and treating their conditions.

In most cases these people are not acutely ill and, therefore, can walk to your office. When you examine them, they will probably sit in a chair beside your desk. Measure the blood pressure sitting. (Might I suggest here that many measurements of blood pressure, casually made, are of little value in this scoring system, and if you wish to apply the tests which I am mentioning now, it is best to become acquainted with the procedure recommended by the Committee for the Stan-

dardization of Blood Pressure Readings of the American Heart Association and the Committee for the Standardization of Blood Pressure Readings of the Cardiac Society of Great Britain and Ireland. The report of this Committee is found in the *Journal of the American Medical Association*, 113:294, 1939). Having measured the blood pressure, use the chart of Figure 2 to find the blood pressure score. (This chart was published in the *Delaware State Medical Journal* for February 1943) The score might well be normal, for many of the patients feel quite well when "just sitting."

When you have the blood pressure score, normal or abnormal, there is another simple test which you can apply at once. Sooner or later, everyone interested in circulation begins to think of measuring cardiac output. This measurement is not simple. Sometimes it requires temporary hospitalization, which

may be costly. Many attempts have been made to find a formula which can be applied to blood pressure and pulse rate readings to give an index of cardiac output without all the fuss and bother of the standard test. One such formula is that of Furst and Soetbeer². It gives an index called the "volume filling index", obtained by dividing pulse pressure by diastolic pressure plus one-third the pulse pressure

$$\left(\frac{\text{Pulse Pressure}}{\text{Diastolic Pressure} + \frac{1}{3} \text{ Pulse Pressure}} \right)$$

Figure 4 makes this calculation easy. This, also, was published in the *Delaware State Medical Journal*, March 1943. The two vertical graduated lines are for systolic pressure and diastolic pressure. This sloping line with V at the upper end is for the volume index. Simply take a transparent ruler, or a piece of string, and stretch it across the two vertical lines, from the systolic reading to the diastolic reading, and then on to the sloping line to measure V.

Some have concluded that such a formula has no relationship to cardiac output as measured by standard methods. Recently we have

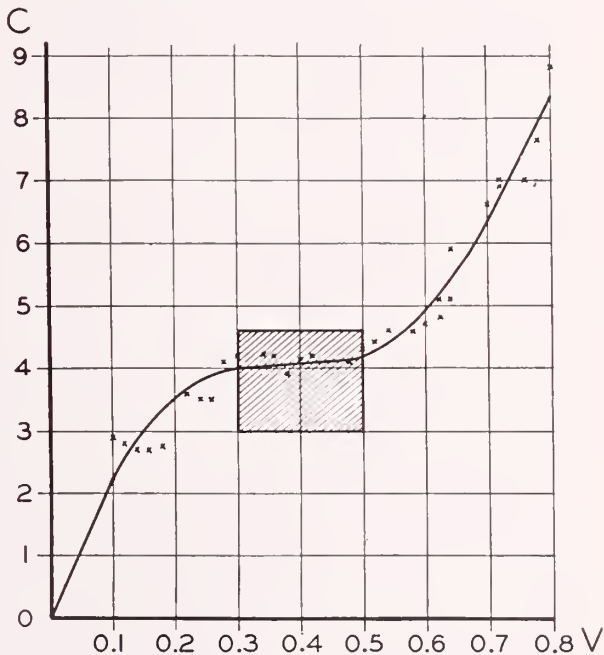
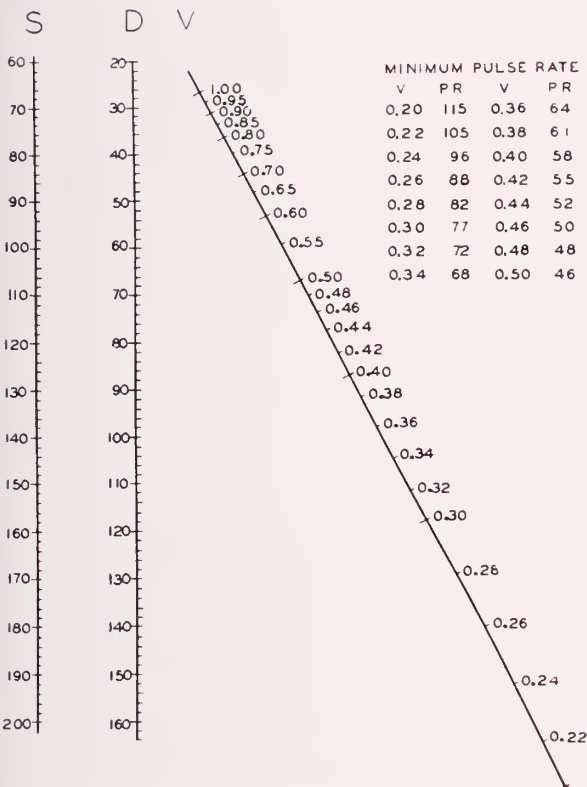


FIG. 4—Chart for colculation of filling volume index (V) from systolic and diastolic pressures. To use this chart, simply stretch o piece of string or lay o transparent ruler across the chart in such a way that it cuts the reading of systolic and diastolic blood pressures and extends to the volume index line. Read off the volume index and look at the toble of minimal pulse rates to see whether or not the patient's actual pulse rate is below or above that necessary for proper compensation.

FIG. 5—The trend of average cardiac output, C (liters per minute), with changes in volume filling index, V. The cross-hatched rectangle is bounded by C = 3.0 to 4.6, and V = 0.30 to 0.50, considered as usual (normal) limits. (Data calculated from oll blood pressure and cardiac output figures given in Grollman's "Cardiac Output" published by Charles C. Thomas, 1932.).

applied this test to all blood pressure data and cardiac output figures given by Grollman in his standard text "Cardiac Output." Figure 5 shows the result. In this figure, the vertical column, headed C, shows the average cardiac output corresponding to values of V shown on the horizontal axis. The hatched rectangle in the center is bounded above and below by those levels of cardiac output which Grollman considers usual (3.0 to 4.6 liters per minute.), and on left and right by those values of V, which our experience suggests are the usual limits, 0.3 and 0.5. When the value of V moves further and further away from either our lower or our upper limit, the average cardiac output changes rapidly. With V below 0.3, the cardiac output falls. With V above 0.5 it rises. From this figure it can be concluded that with values of V below 0.15 and above 0.55 the cardiac output is definitely beyond normal limits. Thus, from a simple measurement of blood pressure, one can obtain considerable information as to the probable trend of cardiac output. (In making our calculation and constructing our chart, we were, of course, limited by the blood pressure data given by Grollman, and there is considerable internal evidence that this was not obtained by the rigid procedures recommended for use in our industrial examinations.)

However well your patient may feel, and however normal his blood pressure score and cardiac output while sitting, he obviously cannot go through life sitting. Here, often, is the crux of his complaint. He may become dizzy or actually faint when he moves rapidly from one position to the other. He may feel dizzy when lying down, or when standing up. Perhaps his accident-proneness is due to this dizziness or fainting on changing posture.

It is important to measure blood pressure both lying and standing. We would suggest that the patient be allowed to lie quietly for five minutes, at the end of which time measure pulse rate and blood pressure. Then let him rise slowly and stand loosely with heels together and arms hanging at his sides for another five minutes. Again measure blood pressure and pulse rate. Watch the patient while he is standing. If he becomes pale and breaks into a profuse, cold perspiration,

stop the test. Perhaps it is best to let him stand against a wall in case he suddenly slumps in a fainting spell. In that case he will probably slide down the wall and not hurt himself.

This test is a form of the Crampton² test for "blood ptosis." You might make use of Crampton's arbitrary index, but this index suffers from a serious defect. It considers only changes in systolic pressure and pulse rate, whereas all of our studies point to pulse pressure and diastolic pressure as being the most important factors in any blood pressure measurement.

Although clinical literature mentions trends in blood pressure produced by changes in posture, there is little specific information on this point. From many records of blood pressures taken in the sitting, lying and standing positions, we have been able to study such changes. Figure 6 charts the differences between standing and lying diastolic pressure, pulse pressure and pulse rate which correspond to the values of these factors when lying. Diastolic pressure and pulse rate are always higher standing than lying. The lower the lying diastolic blood pressure, the greater the rise on standing, and this rise can reach a high value. The change in pulse rate is much less pronounced for all levels of

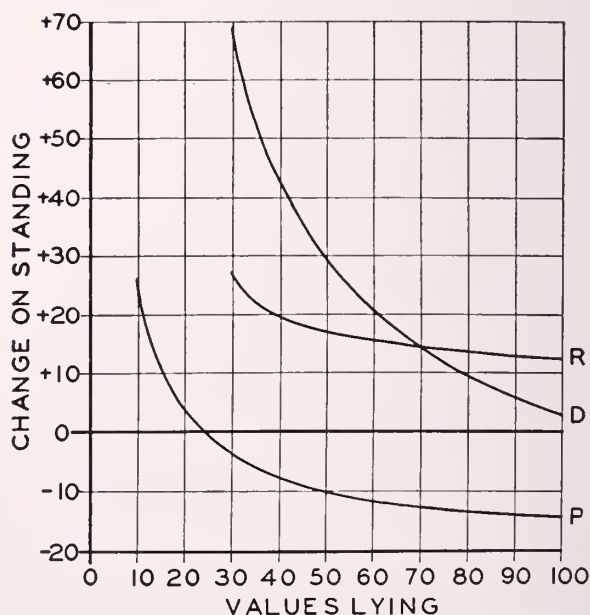


FIG. 6—Differences between standing and lying Diastolic Pressure, Pulse Pressure and Pulse Rate, corresponding to lying values.

lying pulse rate. The pulse pressure is higher when standing than when lying, if the lying value is below about 25 mm. of mercury, but it tends to be over standing than lying when the pulse pressure is above 25 mm. of mercury in the supine position.

It has been suggested that the product of pulse rate by pulse pressure could be used as a clinical gauge of the minute volume of the heart, and, therefore, as a guide to the manner in which the heart is performing its work in diseased states, but the great variability of both pulse rate and blood pressure when casually observed has discouraged such attempts. However, from Figure 6, we can calculate the average value of the product (Pulse Rate x Pulse Pressure) for the supine position and the corresponding value when standing, and therefore, we can calculate the ratio of these pulse rate products.

When a patient moves from a lying to a standing position, his circulation must be adequate to supply blood to the right heart against gravity. Since most of us do not collapse on standing upright after a night's sleep, though some of us may get dizzy, it seems logical to conclude that the normal circulation can at least approach the same minute volume of blood when standing as when lying. Our data from Figure 6 proves that this is so.

In Figure 7, the curved lines connect all values of pulse rate and pulse pressure, lying, which give the same value of the ratio

$$\frac{\text{P. R. standing}}{\text{P. R. lying}}$$

The value of this ratio is entered at the bend of each curve. The rectangle outlined in the center of the chart is bounded above and below by those limits of lying pulse rate, and left and right by the limits of lying pulse pressure which we consider usual. Within this square it can be seen that the P. R. product standing does not fall below 0.925 times that lying, nor in most cases above 1.10 times that lying. In other words, it keeps itself within 92.5 to 110% of the lying product, which is a definite indication that a normal circulation tends to maintain its minute volume on changing from a lying to a standing position.

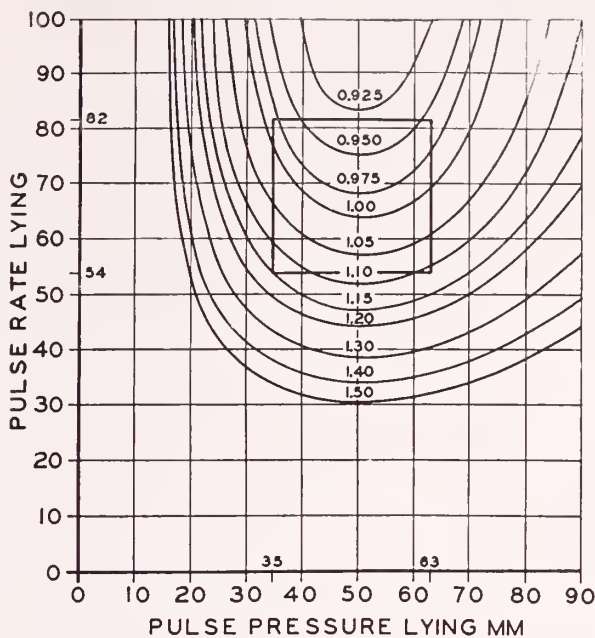


FIG. 7—Values of the ratio $\frac{\text{P.R. standing}}{\text{P.R. lying}}$ corresponding to lying values of P (pulse pressure) and R (pulse rate), and calculated from data of Fig. 6. The figures at the bends of the curves give values of the ratio. The rectangle bounds the usual (normal) limits of lying pulse rate and pulse pressure.

We have now a number of simple weapons with which to judge the circulatory condition of patients who present themselves to us, whether they be in bed when we see them standing up, or sitting down. Is their blood pressure score normal sitting, lying and standing? Is the index of cardiac output normal sitting, lying and standing? What changes occur in circulation when they pass from the lying position to the standing position? Can their circulatory system adjust itself so that the minute volume of blood entering the heart remains approximately the same when standing as when lying, or is this minute volume deficient so that the circulation to the brain cannot be adequate when standing, or is this minute volume standing over-compensated so that a great strain is placed upon the heart?

The manner in which these changes, particularly the postural changes occur, will to a great extent condition the behavior of the patient. Thus, a true orthostatic hypotension in passing from the supine to the standing position is subjected usually to a very great fall in diastolic pressure, and either a rise or

a fall in pulse pressure. Such cases are reported by Davis and Shumway-Davis⁴, and by Korns and Randall⁵. In such cases, of course, the circulation of the blood in the upright position is not adequate to supply sufficient oxygen to the brain and syncope results. The fall to the supine or prone position means immediate elimination of the factor of gravity, and allows restoration of circulation. But should the patient fall in such a cramped position that he cannot lie with his head at least on a level with his legs, restoration of circulation may not take place, and he may die. Of course, there may be various grades of this failure to restore circulation from the frank orthostatic hypotensive to a case bordering on normal.

Figure 7 would indicate that there are many situations in which the minute volume on standing is very much greater than that on lying. In other words, the circulatory system over-compensates. This might be particularly hazardous in a cardiac patient, who is in perfect compensation when lying, but who, on rising may place such a load on the heart that it will fail. A study of the lying blood pressure and of the data of Figure 7 might give some index of this danger. A high pulse rate when lying should be considered as especially significant.

There is a type of case with which we are much concerned, and which we think is more common than is generally supposed. If the lying diastolic pressure and pulse pressure are both low, the pulse pressure may fall slightly on standing, but the diastolic pressure rises greatly. This means a very greatly increased tonus of the blood vessel walls. It leads to insufficient blood flowing into the right side of the heart, and in turn, to sudden death, probably via ventricular fibrillation. On autopsy, if anything is found at all, the left ventricle may be tightly contracted, the right slightly dilated. To this class belong some of the sudden deaths occurring after acute exposure to toxic chemicals, and to this class might belong that recent sad case of the young school girl who, in anticipation of the opening of the next school session, set her alarm clock so that she would be up on time. When the alarm clock woke her, she

jumped out of bed and died. Her mother died in a similar manner.

The significance of these studies of circulation may not be apparent even in connection with the type of case which I have mentioned, unless you recall that the most important center of correlation of bodily functions is that very region of the brain, including the medulla and the hypothalamus, which is most sensitive to deprivation of oxygen. In fact, in the literature of psychosomatic medicine, the hypothalamus and the sympathetic nervous system are mentioned more frequently than in any other field of medicine. This part of the brain by its action as a correlating center between the cerebrum and the somatic organs of the body, can condition the response of those organs to psychic changes in the brain and control psychic response to changes in somatic tissues.

Anxiety, malnutrition, disease, acting through the hypothalamus, can cause not only disturbances of digestion, but disturbances of circulation. Disturbances of digestion, acting through the hypothalamus, can cause not only psychic disturbance, but disturbances of circulation.

Conditions of extreme temperature and humidity affecting the peripheral vessels of the skin and causing redistribution of the blood in the body can have a drastic effect upon the general circulation, and even cause sudden death by circulatory failure.

The drugs which we use, the anesthesia we induce before operations, the surgery we perform to remove damaged or cancerous tissue must all necessarily affect circulation.

Our patient can withstand the changes of circulation only if his initial condition, before drug therapy, before anesthesia, before operation is adequate. He can recover from therapy or from operation, only if his circulation becomes adequate.

Study of the circulation, using the simple tools of a stethoscope, a sphygmomanometer, a watch and your five senses can, therefore, not only be extremely useful in diagnosis, but invaluable in following the trend of your patient's condition under your therapy, or under your operation, and can even assist in prognosis.

We might go further and suggest that a careful study of circulation in all cases might prevent deaths in patients who, by all other tests, appear to be progressing well. We were reminded of this possibility a few months ago, while attending a hospital staff meeting. One of the subjects for discussion was diabetes. Three patients were mentioned, two of whom died suddenly. All three, including those who died, had attained the admirable condition, the acme of perfection in treatment, normal blood sugar, and no sugar in the urine. Nevertheless, two of them were dead. Why do diabetic patients die? In the one case, the patient had been so well after a few days of treatment that he was allowed to sit up in bed. He apparently died from acute embolus, which might well have arisen from an inadequate circulation. The second quite probably died from circulatory failure. Diabetic patients do not die because their blood sugar is high, or their urinary sugar is high. They die because, as part of the picture of improper sugar metabolism, poisonous chemicals are produced, for beta-butyrac acid and acetone are both narcotics. We know that these compounds affect circulation seriously, and that the impairment of circulation might still be present, even when biochemical tests for them are negative. Any physical load suddenly placed upon such a defective circulation can lead to acute collapse and death. The same mechanism can occur in other diseases for we only die when both circulation and respiration fail.

If we know as much as possible about the circulation of each of our patients we are more prepared to combat serious collapse. Proper rest in the correct position, or inhalation of oxygen, or, in some cases, adequate nutrition or therapy, might maintain life sufficiently long to allow remedy of the condition for which the patient came under our care.

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POINT AND COUNTERPOINT

CLAP ALSO CRAP

When steamed up mentally the editor of this sheet, almost always, reverts to colloquial United States. In the August number, page 144, of "Delaware State Medical Journal" (a publication which we read from cover to cover; even though most of it is Greek to us) we read an article "Has Gonorrhea Been Driven Underground?" Let us hope that it has been driven underground but, until such time as the sources of infection have been either eliminated, or at least plugged, it will continue to curse humanity. The writer never had it and still prefers a "cold in the head."

We agree with the authors of the article quoted (which you should read) that, in the nation-wide effort to squelch syphilis, too little attention has been paid to the menace of gonorrhea. We are cognizant, as well as appreciative, of the efforts of the Division of Communicable Disease Control of Delaware State Board of Health to stamp out venereal disease of whatever character. However we certainly, in most strong words, take exception to the implication that the pharmacists of Delaware are in any measureable degree indulging in the treatment of venereal diseases. The No. 2 health profession in the State of Delaware is just as much concerned in this problem as is that of the M.D., and we resent unwarranted slams. The writer, in 51 years of professional practice, has come to know intimately the pharmacists of Delaware and has found them to be (like Ivory Soap) 99-44/100% pure.

The writer is, at this time, an inspector for the Delaware State Board of Pharmacy and will be more than eager to report to the Pharmacy Board the names of any pharmacists who are counter-prescribing for venereal diseases.

For the information of Doctor Chapman and Doctor Cameron we might state that sulpha drugs may only be dispensed upon physicians prescriptions NOT RENEWABLE.

Editorial, *Del. Pharm. Soc.*, September, 1943

Dear Dr. Bird:

Thank you for calling my attention to the editorial in the September Bulletin of the Delaware Pharmaceutical Society.

Since Dr. Chapman is no longer with the State Board of Health—having gone the way of most of the Public Health Service officers assigned to Delaware—the blanket exception made in the editorial prompts me to take my pen in hand and describe the events leading up to the posing of the question which appeared as the title of the article written by Drs. Chapman and Cameron.

Drs. Chapman and Cameron began a study several weeks ago to determine the incidence of gonorrhea among patients with syphilis. It is generally stated that gonorrhea is ten times more prevalent than syphilis, yet the State Board of Health clinics enroll ten patients with syphilis to one with gonorrhea. The study was incomplete at the time the material for the Journal was due, but enough information had been assembled to cause an investigative person to ask questions. Hence, the question "Has gonorrhea been driven underground?" was purely incidental to the study.

A word about the investigation, which is now complete, might be of interest. Since the majority of our male patients are Negroes, Chapman and Cameron interviewed, without selection, the first 404 Negro male patients being treated for syphilis with a view of determining how many of these gave a history of having had gonorrhea. A positive history was given by 390!

Of the 390, they found that 126 had urethral discharges, and smears were taken from these; 74 were found positive; 52 were diagnosed temporarily as non-specific urethritis by smear and were then followed up by culture. The history of the patients, varying from a current infection to 6 years, and from 1 to 5 attacks, prompted them to inquire about treatment, and the following information was obtained:

Treated by a physician, public or	
hospital clinic	170
Received the medicine from a druggist,	183
Had no treatment	37
Total	390
Interesting, isn't it?	

Drs. Chapman and Cameron had no reason to take offense at the editorial. They did however, make the mild observation that the writer might possibly have encompassed too much territory when he stated that in his experience he had found the pharmacists to be—like Ivory Soap—99-44/100% pure, but that if this statement be true, then an injustice had been done and they would be quite content to relegate the unethical pharmacists to the remaining 56/100%!

Sincerely,

EDWIN CAMERON, M.D.

Executive Secretary

War and Tuberculosis

In some of the European countries pneumonia is a chief cause of death. If it can be treated early with one of the sulfa drugs the mortality can be reduced probably by 50% to 75%.

The second major cause of death is tuberculosis and all age groups of the population will be affected. Under the conditions of war and military occupation, the prevalence of the disease is undoubtedly increasing, and it will be one of the principal problems of the reconstruction period, as it was after the last war. This time we should be better equipped to fight tuberculosis, because we have learned that it is a community problem and can be better dealt with through a specialized program. In combating tuberculosis, the first problem will be to locate the cases. Persons with open lesions should be isolated and taught how to care for themselves so as to be of the least possible danger to those with whom they must come in contact. In locating cases, traveling diagnostic units, including x-ray equipment, will be essential. Locating the case is only the initial step; the big problem is to reduce contagion by removal, by home isolation, and by artificial pneumothorax. The public health nurse is an essential member of the public health personnel in the fight against tuberculosis. M. E. Tennant, R. N., Amer. Jour. Nursing, June, 1943.

Editorial

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THE ANNUAL SESSION

The 154th Annual Session of the Medical Society of Delaware was held in Wilmington, October 12-13th, under the Presidency of Dr. Lawrence J. Jones. At the House of Delegates meeting 22 of the 31 attended. Routine business was disposed of promptly, and the House then authorized a Special Committee on Postwar Problems, to consist of the Council (5) and two others; and adopted a resolution against the Wagner Bill (U.S.S. 1161), to be sent to our representatives in Congress, and to others.

The scientific program was one of the best in recent years and was remarkable for the fact that even under war conditions, every essayist on the program was present; and by

the same token, an attendance larger than was anticipated was also present. The program featured military and industrial medicine and surgery, and merited the excellent publicity it received in the local press, whose interest was well expressed in the following editorial from the *Wilmington Journal-Every Evening* of October 11th.

WAR AND MEDICINE

This year's annual meeting of the Medical Society of Delaware, which will be held in the Academy of Medicine, Wilmington, tomorrow and Wednesday, takes on new importance. It will deal largely with the influence of the war upon the obligations, responsibilities and work of the medical profession, as well as related subjects.

The members in attendance will be largely the guardians of the public health on the home front. About one-third of the state's physicians are serving in the armed forces.

Judging from the nature of the program an effort has been made to place emphasis upon industrial and war medical and surgical developments. Various phases of these subjects will be discussed by recognized authorities who have prepared enlightening papers to be read before the meetings.

Gatherings such as this are of interest to the public as well as the medical profession. Because the doctors are constant students in order to keep pace with developments in their calling they take advantage of new things through which the health of the public will benefit. Constructive enlightenment results from meetings at which there is opportunity to study the progressive trends in the field of medicine and surgery.

At the election, Dr. Richard C. Beebe, of Lewes, was elected President for 1944, and the session will be held in Sussex County at a time and place to be determined later.

The annual meeting of the Women's Auxiliary was held on October 13th. Regular business was attended to, and the present officers were re-elected for a two-year term, thus, Mrs. Ervin L. Stambaugh, of Lewes, continues as President.

Due to the war, the social functions were limited to a buffet supper and a buffet luncheon, which were well attended.

War or no war, our 1943 Session was a credit to our ancient and honorable Society.

MISCELLANEOUS

New Concepts of Poliomyelitis Not Correct

Electrical tests of the museles of 49 patients with infantile paralysis lead Joseph Moldaver, M. D., of the Department of Neurology, Columbia University College of Physicians and Surgeons, and the Neurological Institute of New York to declare in *The Journal of the American Medical Association* for September 11 that two of the three new concepts of the disease as described by the Australian nurse Elizabeth Kenny are incorrect. It should be borne in mind that the investigations by Dr. Moldaver were concerned only with Sister Kenny's concepts of the disease and did not in any way involve the Kenny treatment or its results.

"Recently," Dr. Moldaver says, "a new concept of infantile paralysis has been described by Kenny and has been approved by some physicians. This new concept is fundamentally different from the one accepted for more than a century. The phenomena described in this concept are (1) muscle 'spasm' [contraction], (2) 'mental alienation' and (3) 'incoordination.' Only recently the existence of some true paralysis has been accepted by the proponents of this concept. Muscle 'spasm' is regarded as the most damaging symptom in poliomyelitis and is said to lead to degeneration if not treated. The museles opposed to those in 'spasm' become 'alienated,' divorced or erased from the patient's mind. The museles which are in 'spasm' are the damaged ones. . . The 'alienated' museles are non-functioning, not because they are paralyzed by the lesions [injuries] of the anterior horn cells [certain nerve cells in the spine], but rather because for some unknown reason they are unable to receive impulses. The dissociation of the muscle from the brain is regarded as due to some physiologic block. 'Alienated' museles may become permanently nonfunctioning if not treated. In summary, according to this concept, infantile paralysis is a 'spastic' not a flaccid [weak, lax and soft] paralysis; the museles affected by this disease are those in 'spasm.' The antagonist museles are 'mentally alienated,' and some museles show incoordination. The danger of paralysis lies mainly in allowing 'spasms' to continue.

"In view of this concept, investigations were conducted in order to find whether or not these newly described symptoms actually exist and if they were actually overlooked for more than a century. . . ."

Forty-nine patients were tested, nerve and muscle degeneration was explored by what is known as chronaxia measurements (time required for a muscle to react to electrical stimulation) and "spasm" was studied in some of these patients mostly by electromyograms which chart the electrical impulses generated by museles. Museles which might be considered to be "alienated" as well as museles in "spasm" were primarily explored by chronaxia measurements, museles regarded as normal clinically were also studied.

Dr. Moldaver says that chronaxia measurements detect slight nerve and muscle degeneration. "In all 'alienated' museles," he declares, "there was evidence of neuromuscular degeneration. In most of the 'alienated' museles, the nerves and museles were in a state of partial neuromuscular degeneration. In a partial neuromuscular degeneration, some of the muscle and nerve fibres are damaged, while other fibres of the same muscle escape degeneration. This part of the muscle is therefore still able to respond to stimulation of its motor center. . . ."

He declares that some of the museles considered to be "alienated," according to the definition by Kenny, were found in total neuromuscular degeneration.

As a result of his study he concludes that 1 "Muscle spasm" is not "the most damaging symptom" and does not lead to nerve and muscle degeneration. "Spasm," he says, is not an entity but a complex phenomenon. It is the result of a combination of the normal stretch reflex (the mechanism that keeps a muscle at its normal tension), irritation of the membrane lining of the nerves where they leave the spine, increase of the normal tonus in healthy and strong museles or muscular fibers opposed to weak or paralyzed museles, injuries to certain portions of the nervous system.

2. In "alienated museles" there is neither a functional paralysis nor a "physiologic block." That these museles have partially or completely lost their power to contract is due

to the fact that the anterior horn cells are damaged or destroyed. In the paralyzed muscles considered to be "alienated," there is always some degree of neuromuscular degeneration.

3. "Incoordination" is caused, if at all, by the inability of partially or totally denervated muscles to respond to otherwise normal nerve impulses.

Sister Kenny Criticizes

NEW YORK, Oct. 9 (AP).—Sister Elizabeth Kenny, Australian nurse who devised a method of treating infantile paralysis, was quoted by the Herald-Tribune today as saying physicians in the United States had administered the treatment in "shoddy fashion."

"It takes at least two years to learn my technique," she said in the interview, "... in Australia it is a two-year course and here in the United States doctors look into my concepts for as little as one week and then consider they are experts."

Sister Kenny was quoted by the Herald-Tribune as saying that during her three and a half years in the United States "no one has completely learned my technique" and "that has been a great sadness to me."

Wilm. *Journal-Every Evening*, Oct. 9, 1943

Laboratory Technicians

The meetings of the Delaware State Association of Clinical Laboratory Technicians, for November and December are as follows:

November 16, Memorial hospital, 8:00 p. m. Speaker: Dr. A. E. Rakoff, Endocrinologist of the Jefferson Hospital, Philadelphia. Subject: "Hormone Assays and their Diagnostic Value."

December 7, Delaware hospital, 8:00 p. m. Speaker: Dr. J. C. Kakavas. Subject: "Penicillin—Its Production and Use."

Physicians and nurses will be welcomed.

BOOK REVIEWS

Lectures on Peace and War Orthopedic Surgery. Edited by James E. M. Thompson, M. D. Pp. 322, with 350 illustrations. Cloth. Price, \$4.00. Ann Arbor: Edwards Brothers, Incorporated, 1943.

This volume represents the transactions of the Instructional Section of the American Academy of Orthopedic Surgeons at their meeting in Chicago, January, 1943. The 65 papers, covering a very wide scope of treatment orthopedics, are by men of authority in their respective subjects. The book is too advanced for students, but is an excellent reference work for general surgeons and orthopedists.

While the size of the page, 8½x11 inches, makes its housing in the average private library a bit awkward, the format is pleasing, and the double columns of photolithographed text are easily read. The illustrations are quite good. The big weakness of the book is—no index.

A Synopsis of Clinical Syphilis. By James Kirby Howles, M. D., Professor of Dermatology and Syphilology, Louisiana State University. Pp. 671, with 123 illustrations. Cloth. Price, \$6.00. St. Louis: C. V. Mosby Company, 1943.

The material on this subject that must be compressed within the confines of a small book is too vast to present an adequate consideration without slighting certain topics, but by and large, the doctor has done a good job.

This little book covers the subject well. The descriptive chapters, from the primaries through to the neuro phase, are well written. All phases of the disease are briefly considered, with an up-to-date resume of the treatment. The book contains many interesting and instructive photographs of the different lesions of syphilis, making the text more interesting and illuminating.

Pennsylvania Formulary (P.F.). Prepared by the Joint Committee. Pp. 108. Paper. Harrisburg: The Joint Committee, 1943.

This brochure is a new formulary aimed at providing an acceptable list of preparations that can be stocked at a minimum capital outlay on the part of the pharmacist. Its secondary aim is to discourage self-medication. Prepared by the Joint Committee of the Pennsylvania Pharmacists Association and of the Medical Society of the State of Pennsylvania, the booklet is very well adapted to its purposes, and contains few typographical errors; "Elixer," however, should be corrected

to "Elixir." There are adequate alphabetical and therapeutic indices.

Internal Medicine in General Practice. By Robert Pratt McCombs, Lieutenant, M. C., U. S. N. R., recently instructor in Internal Medicine for the Statewide Postgraduate Program of the Tennessee State Medical Association. Pp. 694, with 114 illustrations. Cloth. Price, \$7.00. Philadelphia: W. B. Saunders Company, 1943.

The author states that his purpose in writing the text was to supply the need of a concise volume in which the practical clinical aspects of internal medicine are outlined for general practitioners and students.

This has been admirably accomplished by also including in the text the significance of the recent advances in the basic sciences and the latest methods of diagnosis, correlating laboratory technique with the clinical symptoms of disease.

The title of the book has been well chosen, for it fully covers the field of diagnosis and treatment for the general practitioner.

It is a book we can heartily recommend.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC.

Required by the Act of Congress of August 24, 1912, and March 3, 1933, of The Delaware State Medical Journal,
Published monthly at Wilmington, Delaware,
for October 1st, 1943.

STATE OF DELAWARE }
COUNTY OF NEW CASTLE } SS.

Before me, a Notary Public in and for the State and county aforesaid, personally appeared M. A. Tarumianz, M. D., who, having been duly sworn according to law, deposes and says that he is the Business Manager of the Delaware State Medical Journal and that the following is to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, as amended by the Act of March 3, 1933, embodied in section 537, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the pub-

lisher, editor, managing editor, and business managers are:

Name of—	Post Office Address
Publisher, Medical Society of Delaware,	Wilmington, Delaware.

Editor, W. Edwin Bird, M. D., 618 Citizens Bank Bldg.,	Wilmington, Del.
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Associate Editor, W. O. LaMotte, M. D., Medical Arts Bldg.,	Wilmington, Del.
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Business Manager, M. A. Tarumianz, M. D.,	Farnhurst, Delaware.
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The Medical Society of Delaware

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5. That the average number of copies of each issue of this publication sold or distributed through the mails or otherwise, to paid subscribers during the twelve months preceding the date shown above is _____. (This information is required from daily publications only.)

M. A. TARUMIANZ, M. D.
(Signature of Business Manager)

Sworn to and subscribed before me this 30th day of September, 1943.

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MARY S. RHODES
Notary Public

(My commission expires April 1, 1945)

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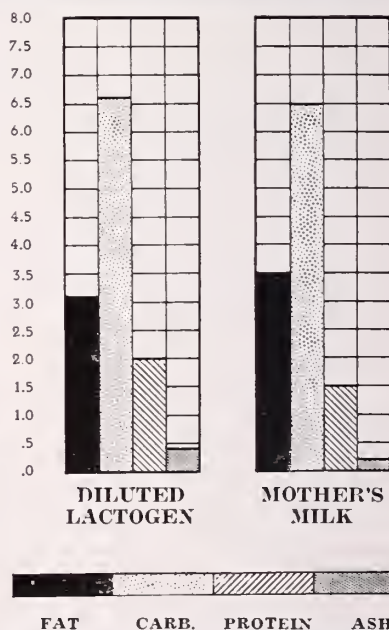
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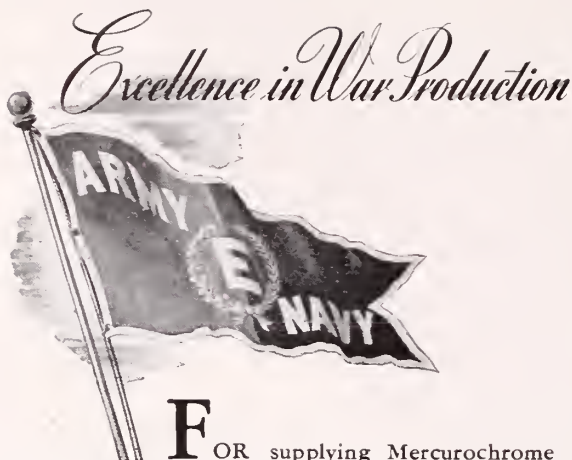
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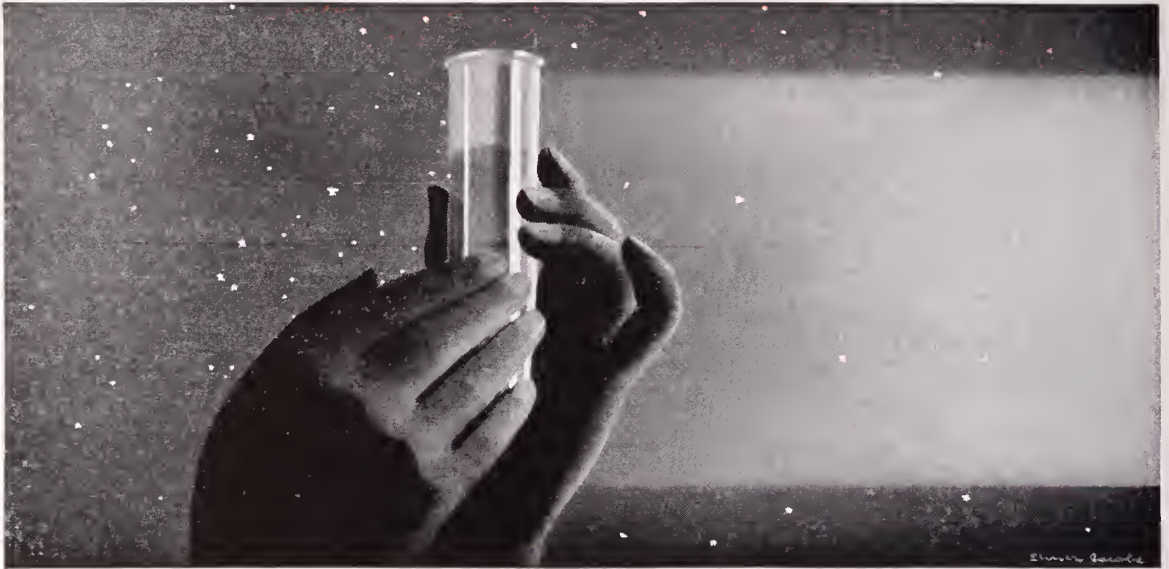
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MEDICINE'S CONTRIBUTION TO INDUSTRY*

LEMUEL C. MCGEE, M. D., Ph. D., and
DANA D. BURCH, M. D.

Wilmington, Del.

Industrial medicine has been defined as the practice of medical supervision, preventive medicine and public health within the confines of an industry. As a specialty, industrial medicine answers a need in industry not met by the surgeon, the diagnostician, the venereologist or other specialists in medicine.

The basic function of an industrial medical department may be described by paraphrasing the mission of the medical department of the U. S. Navy, "To keep as many men at as many guns as many working days as possible," to read, "To keep as many men at as many machines as many working days as possible." Such an aim centers attention on the health and well-being of the individual working man. All obligations of the physician in industry stem from this primary consideration. A working day lost by a payroll employe is a loss to that man, to his family and his community, as well as a loss to the industrial organization in which he has a place.

Industrial medicine as a recognized specialty occupies an important place in the organization of the American Medical Association. There is a Council on Industrial Health as well as a Section on Preventive and Industrial Medicine and Public Health. Each year for the past five a Conference on Industrial Health has been held under the auspices of the Council. The needs of the nation during the past few years have placed a tremendous burden on industrial medicine. Problems have arisen faster than medical men have been trained to meet them. Many state and

local medical societies have special committees working on these problems. At the present time neither The Medical Society of Delaware nor the constituent county medical societies have such a committee. It seems imperative to those of us in industrial medicine that some concrete program of cooperation between physicians in industry and those in private practice in this State should be formed.

In this presentation we wish to refer to some of the tasks which the physician in industry undertakes and present examples of what can be accomplished.

THE PRE-EMPLOYMENT EXAMINATION

One of the responsibilities of the medical man in industry is the selection of men physically qualified for work. The examination used for this selection is called the pre-placement or pre-employment examination. Men should not be started in occupations to which they are not physically adapted. Physical and mental handicaps limit a man's usefulness—this unalterable, stubborn fact must be faced by all who deal with employment. Unfit employes can be made more unfit by improper placement. In many instances the unfit man can be made fit for a job through correction of his handicap. In the case of handicaps which are not remediable, the recommendations of examining physicians often enable industry to use physically handicapped men and women safely and effectively.

Among 41,752 pre-employment examinations performed by physicians for the Hercules Powder Company from July 1, 1942 to June 30, 1943 there were 3,623 men and women physically or mentally unsatisfactory for the job for which they were applying. Of this group, there were 847 who obtained correction for their disabilities and were subsequently placed at work. The broad causes for rejection of the remaining 2,776 applicants are shown in Table 1.

* Read before the Medical Society of Delaware, Wilmington, October 12, 1943.

TABLE 1. CAUSE FOR MEDICAL REJECTION OF MEN AND WOMEN IN INDUSTRY
2776 Rejections Among 41,752 Examinations

Broad Cause for Rejections	Number	Percent
All causes	2776	100
Cardiovascular Disease		
Hypertensive	553	20.0
Rheumatic	142	5.1
Arteriosclerotic	98	3.5
Syphilitic	47	1.7
Other and unspecified	179	6.5
Total	1019	36.8
Visual defects	430	15.5
Hernia	286	10.3
Genito-urinary disease	273	10.0
Respiratory disease	264	9.5
Orthopedic deformities	111	4.0
Oral and dental disease	68	2.5
Disease of the Nervous System	63	2.3
Dysfunction of Endocrine glands	46	1.6
Miscellaneous	211	7.5

Thus, 6.6% of the more than forty thousand men and women applying for work in a chemical industry could not safely be placed at work because of recognized dangers to themselves, or to their fellow workers. This includes work for which particular skills are required and work where hazards inherent in the job (e. g., exposure to toxic chemicals) require more than the average physical fitness of unskilled labor. This figure was obtained during a year when the bottom of the manpower barrel was being scraped. Yet it is a year when industry put forth a strenuous effort to use available manpower as effectively as possible. Many of the rejected applicants could have been made fit for industrial work had they been willing to obtain the required medical, surgical or dental attention.

THE PERIODIC RE-EXAMINATION

Once in industry, the worker requires guidance in the preservation of his health so as to maintain and prolong his economic usefulness. We have much to learn concerning the art of applying principles of preventive medicine as well as much to learn about the means of preventing disease. The periodic re-examination affords the physician an opportunity to detect early signs of disease from whatever cause, and to educate the worker concerning the preservation of health. The periodic check-up yields information on the response of the health of men and women to their occupation. Table 2 shows, by example, what can be learned about the physical status of industrial personnel.

TABLE 2. FINDINGS IN 7488 PERIODIC PHYSICAL EXAMINATIONS
July 1, 1942 — June 30, 1943

	Number of Employees	Percent
Number of examinations	7488	100
Twenty pounds or more overweight	1608	21.5
Twenty pounds or more underweight	847	11.3
Needing dental attention	1906	25.5
Diseased (infected) tonsils	182	2.4
Hernia	100	1.3
Hypertension (blood pressure-systolic reading 150 mm. Hg. or above and/or diastolic reading 90 mm. or above) ..	982	13.1
Other evidence of cardiovascular (heart) disease	165	2.2
Total loss of effective vision in one eye ..	36	0.48
Visual refractive error (impaired vision 20/50 or less in one eye; 20/40 or less in both eyes)—Total	887	11.9
Corrected	532 — 7.1%	
Not corrected	355 — 4.8%	
Impaired hearing (50% or less of normal hearing in one or both ears)	465	6.2
Abnormal blood counts	92	1.2
Abnormal urinalyses	203	2.7
Miscellaneous abnormalities	1127	15.0

It is obvious from the findings in this table that the health of many American workers is not what it should be. After defining the problem in such a fashion, the next step is to convince each individual concerned that he can and should act for the preservation of his health. The worker is told what is found in his examination and its probable significance. He is urged to consult his personal physician or dentist as is required. Emphasis is placed on the physician-private patient relationship, since we feel that illness and injury which does not arise out of and because of industrial employment is clearly a responsibility of the individual and his personal physician in a democratic way of life. To aid the effectiveness of this relationship the industrial organization with which we are associated pays a sickness and disability wage to help the employe pay medical and hospital bills when sickness overtakes him. By follow-up interviews between the worker and the physician or nurse in industry, the worker's acceptance of the recommended program and his progress can be confirmed. Progress in this direction is slow and requires tact on the part of the medical personnel. Table 3 presents the accomplishments of one plant through following up the recommended corrections of physical defects.

**TABLE 3. PHYSICAL DEFECTS STUDY
SUMMARY OF EXPERIENCE DURING 1942, USING
MONTHLY PHYSICAL STATUS CHECK-UP
IN PLANT OF 1240 EMPLOYEES**

	No. of Employees
1. Dental attention needed by	375
Dental care completed by	180
2. Obese employees (20 lbs. or more over ideal weight)	268
Significant loss of weight in	132
3. Malnutrition (20 lbs. or more under ideal weight)	151
Significant gain in weight in	76
4. Hypertension (above 150 systolic and/or 90 diastolic)	41
Lower by end of year	28
Higher by end of year	10
Unchanged by end of year	3
5. Uncorrected visual refractive errors	33
Correction by glasses obtained	15

It can be seen that approximately half the personnel needing medical and dental attention in this plant obtained the recommended care sometime during the year. All of this work was done outside the industrial medical unit.

PREVENTIVE MEDICINE IN INDUSTRY

The third point which we wish to discuss is preventive medicine in industry. Industry's contribution to case finding in syphilis illustrates a vast opportunity in preventive medicine. Latent syphilis is recognized by means of the pre-employment and periodic serological test. From the record of 60,619 serological tests obtained on workers during the past two years there were 1,333 positive findings. This represents an incidence of approximately 22 cases per 1,000 among the industrial personnel of chemical plants well distributed in the continental United States. After confirmation tests were obtained the infected individuals were placed under anti-syphilitic treatment given by personal physicians or clinics. Ninety percent of these persons with latent syphilis did not know of their infection prior to their industrial medical examination. Through the requirement that workers with proven syphilis receive adequate treatment numerous instances of subsequent disability from syphilis of the cardiovascular system, the central nervous system and of abdominal viscera are presumably prevented.

Another example of the opportunity for preventive medicine is found in the health hazards created by the use of toxic chemicals in industry. There is a rather large amount of toxicologic data concerning some of these chemicals, of others we know little or nothing. Inasmuch as the chemist continues to present us with new materials, the industrial physi-

cian never lacks for interesting problems in the clinical investigation of hazards from compounds of appreciable toxicity. A number of rather toxic aromatic nitro compounds are used in the manufacture of munitions of war. Trinitrotoluene is a well-known example. In spite of modern manufacturing safeguards, the workman (especially the unskilled, rapidly trained "war worker") may be adversely affected by TNT. A brief discussion of trinitrotoluene will illustrate a phase of the opportunity for medicine to be of service through close association with industry.

TRINITROTOLUENE

Trinitrotoluene (T. N. T., trotyl, trinol, to-lite, triton or trilite) is a fine, flaky, yellowish powder. Of the six isomers possible from the triple nitration of toluene, the 2, 4, 6 trinitrotoluene (m. p. 81 C.) is the product commonly known as T. N. T. The character of the technical product depends upon the care used in its purification. There is reason to believe that recent refinements and methods of manufacture of T. N. T. in America yield a purer product and afford less exposure to the operators than did the methods in vogue during World War I. The medical literature on T. N. T. toxicity is controversial.¹ Some observers have felt that much of the toxicity of technical T. N. T. is due to the presence of isomers or other nitration products rather than to pure 2, 4, 6 trinitrotoluene.

Trinitrotoluene may enter the body by absorption through the skin, by inhalation of dust and fumes or by ingestion along with food and drink.¹ T. N. T. colors the skin yellow. This staining appears to be facilitated by perspiration. Many such stained workmen have no complaints, others have marked skin irritation. The dermatitis is found on the exposed portions: hands, forearms, face, neck and ankles. The lesion starts with redness and roughening of the skin and progresses to a papular eruption. Marked desquamation usually follows. The irritation is intense in some of the workers. When a mild dermatitis appears during the first few days or few weeks of exposure it is prone to clear spontaneously even though the workman continues his contact with T. N. T. When the

dermatitis appears in a worker having had several months to a year or more of contact with T. N. T., the lesions characteristically are more severe and are apt to persist until the worker is removed from contact.

Increased appetite and epigastric discomfort simulating hunger are reported by these workers. Many of the men find that they feel better when they eat frequently. Beginning a shift with a well-filled stomach appears in itself to be a protective device against T. N. T. intoxication. Occasionally the epigastric discomfort becomes colicky and is accompanied by nausea and vomiting. British observers believe that there is a definite syndrome of toxic gastritis in T. N. T. workers.^{1a}

Trinitrotoluene is said to form methemoglobin and nitric oxide hemoglobin in the blood.² Affected workers have a characteristic facies. The lips have a grayish lilac hue and the skin of the face has an ashen pallor similar to that seen in shock. This peculiar discoloration is noted also on the curl of the helix and the lobe of the ear. Such cyanosis may appear soon after the worker enters T. N. T. operations and is not necessarily associated with anemia or symptoms of illness. When symptoms are found in men with rapidly developing cyanosis they are those expected of anoxemia: case of fatigue, breathlessness, fainting, dizziness, drowsiness and depression. After temporary removal from their environment many of these workers can return to T. N. T. operations with impunity.

Trinitrotoluene can damage the liver. Acute toxic hepatitis, caused by this agent, is serious and may lead to death.³ The jaundice characteristic of this effect of T. N. T. exposure may appear suddenly without preceding cyanosis or gastrointestinal symptoms. Palpable enlargement of the liver may or may not be present at the onset of jaundice. Physicians who follow the experiences of T. N. T. workers feel that some persons are particularly susceptible to toxic effects of the compound. von Oettingen has suggested that variations in the intensity of oxidation and the character of detoxification of T. N. T. in the body may explain the variations in sus-

ceptibility of different individuals.⁴ Early diagnosis and removal of workers from contact is essential for reduction in the morbidity from T. N. T. hepatitis.

Trinitrotoluene not uncommonly produces an anemia. Hematologic studies suggest that this is due to destruction of the erythrocytes and is accompanied by a limited increased activity of the bone marrow.² Subsequent suppression of the bone marrow activity progressing to fatal aplastic anemia is, fortunately, quite rare.

The clinical findings in a group of 247 men working in T. N. T. during 1942 are summarized in Table 4.

TABLE 4. CLINICAL FINDINGS IN 247 WORKERS EXPOSED TO TRINITROTOLUENE (1941-1942)

Finding	Number of Workers Affected	Percent of Workers Affected
Cyanosis	41	16.6
Leucocytosis (more than 12,000 leucocytes)	32	13.0
Dermatitis	16	6.5
Anemia (less than 4,000,000 erythrocytes)	5	2.0
Jaundice (mild)	4	1.6
Jaundice with other evidence of hepatitis	4	1.6
Peripheral neuritis	1	0.4

CONCLUSION

The increase in industrial activity of the nation during the past few years has focused attention on the actual and potential contribution of medicine to industry.

The physician has a significant role in the selection and placing of men and women in industrial work. His responsibility extends to the assistance needed in preserving the economic usefulness of all workers and in the proper utilization of handicapped workers. The vast field of preventive medicine and the need for recognition and removal of health hazards from toxic chemicals requires continuous investigation. The dividends in terms both of health and man-hours of work saved are enormous. Examples of what has been accomplished in a chemical industry serve to emphasize medicine's contribution to the health of the American worker, to point out opportunities for further accomplishments.

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"WAR FOOD AND DIABETES"*

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and

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Most people know that diabetics rely upon a carefully chosen diet to help regulate their condition. In the present war emergency we are all under the necessity of regulating our diets according to foods that are available within the general rationing system. Therefore, since some foods may be had in limited quantities only and others may tend to disappear entirely, certain questions demand an answer with regard to war food and diabetes.

How can the person with diabetes control his condition under the present food allotment? Should the diabetic have special food allowances? Would increased food restrictions, or decreased allowances in case the war is prolonged, reduce the diabetic's span of life or usefulness, or cause the diabetic to develop serious diabetic complications such as blindness from cataracts or gangrene? How does our food rationing for the diabetics compare with England's, Russia's, and Germany's? Finally, what is the present status of persons with diabetes in our war effort?

Because diabetes is not a reportable condition, the exact number of living diabetics in the United States is unknown. However, it is known that diabetes is on the increase, and there are hundreds of thousands living with it in our country. One can guess the approximate number of diabetics throughout the

country when he estimates the number of them treated in the various clinics of a city or town. Thus, in our own metabolic department at the Philadelphia General Hospital we have over 1800 registered diabetics coming at regular intervals for treatment. Naturally with hundreds of thousands of diabetics throughout the United States the question "How can the person with diabetes control his condition under present food allowances?" is frequently asked by both the diabetic and by the interested non-diabetic.

In this second World War the picture for the treatment of diabetes is altogether different and much brighter from what it was in the first World War. Today we have two kinds of insulin which we did not have in World War No. 1: the rapid acting or ordinary insulin, and the slow acting or protamine zinc insulin. Naturally, with these insulins at our command, the person with diabetes can now act like a normal person and indulge in a more liberal diet.

Since we did not have insulin in the first World War, the diabetic was generally on a rigid diet. Such a diet treatment often caused nutritional disturbances to develop, which today are easily recognized and in many instances corrected. The diabetic before the discovery of insulin was helpless, more or less an invalid, with a short life span of usefulness. Those whose condition caused diabetic coma, died. The diabetic child particularly was short lived.

In the pre-rationed period before the present war, the ordinary person without diabetes ate more than he does now, not infrequently to his disadvantage. Often his diet was inadequately balanced, causing nutritional disturbances which were responsible directly or indirectly for barring a large number of prospective candidates from our armed forces. Since rationing has been in effect changes have already taken place for the better in the physical health of the individuals.

Diabetic food, as it is prescribed today, is similar to that for the non-diabetic, i. e., it contains all the necessary vitamins, minerals, proteins, fats, and carbohydrates or sugars essential to life. For good nutritional requirements, every individual, diabetic or

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non-diabetic, needs two servings of vegetables a day. If the diabetic's food allowance, as given him by the doctor or dietitian, includes three or four servings of vegetables a day, it may be necessary, if certain vegetables are impossible to obtain with the prolonged duration of the war, to substitute bread and other cereal products for them. This can be done without impairment of health.

The same substitution may be carried out with fruits without harm to bodily function. Two servings a day, one a citrus fruit such as orange or grapefruit, is all that is necessary. However, changes in the protein factor of the food allowance per day appears to affect some people, may I say, mentally. They seem to become alarmed about the diminished meat allowance, but this shortage is not as serious as it may appear. Too many persons leading a sedentary life overeat, especially meat; note the protruding abdomen or pouch of the business person of middle life.

England has already shown improvement in the health of its people since the onset of rationing. Proteins are necessary to repair the wear and tear of body tissues and are essential for life and growth. But one must bear in mind that meat is not the only source of protein. Non-rationed foods can be used in place of the meat allowance, protein food such as eggs, poultry, fish and other forms of sea-life. Non-rationed cheese may be substituted for meat when the meat coupons are exhausted. Soy beans and other legumes or certain vegetables will undoubtedly play a greater part in filling protein values as rationing becomes more severe. As for fat, oleomargarine requires fewer ration points than butter; and in some instances peanut, cottonseed or olive oil may be substituted, likewise non-rationed mayonnaise and other salad dressings or clarified fats derived from the meat trimmings.

In our metabolic department the diabetics are taught to substitute one type of food for another of equal nutritional value as to carbohydrate, fat or protein. Thus:

1. Substitute any one of the following for 1 slice of bread:
 - 1 serving of cereal
 - 5 saltines
 - 2½ graham crackers

- 3 large soda crackers
 - 6 tablespoons of mashed potatoes
 - 2/3 medium size potato
 - 2 tablespoons (dry) macaroni, rice, spaghetti or noodles
2. Substitute any one of the following for one ounce of meat:
 - 1 ounce of fish or poultry
 - 2/3 ounce of cheese
 - 2 tablespoons of cottage cheese
 - 1 egg
 - 6 oysters, 6 shrimps or 6 clams
 3. Substitute any one of the following for ¾ cup of whole milk:
 - 6 tablespoons (unsweetened) evaporated milk
 - 1 ounce meat plus 1 serving of fruit plus 1/3 pat of butter
 - ¾ cup cultured buttermilk
 - ¾ cup churned buttermilk plus 1/3 pat of butter
 4. Substitute any one of the following for 1 pat of butter:
 - 1 tablespoon of either mayonnaise, oleomargarine, bacon fat, lard, or any oil except mineral oil
 5. 1 serving of fruit=1 serving of 3 per cent. veg. and 1 serving of 6 per cent. vegetables.
 6. 1 serving of 9 per cent. vegetables=1 serving of 3 per cent. vegetables and 1 serving of 6 per cent. vegetables.
 7. 2 servings 3 per cent. vegetables=1 serving of 6 per cent. vegetables.
 8. 1 serving of 18 per cent. vegetables=1 serving of fruit plus 1 serving 3 per cent. vegetables and 1 serving of 6 per cent. vegetables.

The servings of fruit, cereal and vegetables, etc., are as follows:

FRUIT

(One serving=9 grams carbohydrates)

	Servings
Apple	1 medium
Applesauce, unsweetened	½ cup
Apricots, fresh	2 medium
Apricots, dried	4 small halves
Blackberries	2/3 cup
Blue berries	2/3 cup
Banana	½ medium

	Servings
Cherries, sweet	1/3 cup
Cranberries	1/2 cup
Cantaloupe	1 cup (inch cubes)
Grapefruit	1/2 large
Grapefruit Juice	1/2 cup
Grapes	15 medium
Honeydew	1 cup (inch cubes)
Orange	1 small
Orange Juice	1/3 cup
Peach	1 medium
Pear	1 medium
Prunes, dried	2 medium
Plums	2 fresh
Pineapple, fresh	2/3 cup diced
Raspberries	2/3 cup
Strawberries	1 cup
Tangerine	1 large
Watermelon	1 1/2 (inch cubes)

CEREALS

One serving=15 grams carbohydrates

	Servings
All Bran	1/2 cup
Branflakes	1/2 cup
Cornflakes	1/2 cup
Shredded Wheat	1 biscuit
Rice Krispies	1 cup
Puffed Rice	1 cup
Puffed Wheat	1 cup
Wheaties	3/4 cup
All Cooked Cereals	2 tablespoons (dry)
Macaroni or Spaghetti	2 tablespoons (dry)
Noodles or Rice	2 tablespoons (dry)

3% VEGETABLES

One serving=2/3 cup

Broccoli (2-5 inch stalks)	Onions, green (5 small)
Cabbage	Sauerkraut
Cauliflower	String Beans
Chard	Summer Squash
Eggplant	Tomato, 1 small
Okra	Tomato juice, 1/2 cup

6% VEGETABLES

One serving=2/3 cup

Beet Greens	Pumpkins
Kale	Turnips
Peppers, (1 medium, 3-inch diameter)	

9% VEGETABLES

One serving=2/3 cup

Beets	Onions, white
Brussel Sprouts	Peas, canned
Carrots	Rutabagas
Dandelion Greens	Winter Squash

15% VEGETABLES

One serving=1/2 cup

Peas, fresh	Parsnips
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18% VEGETABLES

Corn, fresh, 1/2 cup, or 1 ear 8 inches long
Potato, 1/2 cup mashed or 1 medium size
Lima Beans, fresh, 1/2 cup (2 1/2 inches in diameter)
Navy Beans, cooked, 1/2 cup (2 1/2 inches in diameter)

UNLIMITED FOODS

Asparagus	Escarole	Mushrooms
Celery	Junket Tablets	Lettuce
Cucumbers	Lemons	Radishes
Rhubarb	Spices	Spinach
Tea	Vinegar	Coffee
	Clear Broth	

This method of food substitution has been in practice in our department for the past several years and has helped the diabetic solve the food problem in our present war effort.

Even prior to October, 1943, when the National Research Council published its recommendations on rationed foods, most of the local ration boards required of the diabetic a letter from his doctor stating the amount of rationed foods—for his physical disorder per day. The October 16, 1943, issue of the Journal of the American Medical Association carried the forms of certification recommended by the National Research Council as described below:

Form to Be Executed by Patient

To Ration Board No, State of I hereby request an extra allotment of such rationed foods as have been designated for the disease with which I am suffering, namely (name of disease), and hereby authorize my attending physician (name of physician)

to certify to the existence of such disease for the purpose of obtaining the designated foods.

(Signature)

(Address)

(Date)

(Number of ration book)

Form to Be Executed by Physician
I hereby certify that I have examined
..... that my
diagnosis of his (her) condition
and that he (she) has been under my care
for months. I further certify
that he (she) needs the amount of food speci-
fied for the disease for 2, 4, 6, 8, 10, 12 months.
(encircle appropriate number)

(Signature)

(Degree)

(Address)

(School of graduation)

(State and year of licensure)

(Date)

The question "Should the diabetic have special food allowances?" has created some controversy. The answer depends upon the type of diabetes. Diabetics are classified into two types: those that require insulin, and those that do not. Those persons with diabetes not requiring insulin could not, like normal persons, substitute foods rich in carbohydrate or sugar such as bread, potatoes and the like for the restricted protein or fat. Indulging in such substitution would mean the taking of insulin. Then there is the juvenile group, whose condition requiring the use of insulin is of such a nature that a slight change in the insulin or diet will cause marked disturbances of the blood sugar level. But an adult diabetic already on insulin can make modifications in his diet without much disturbance of his condition.

Confronted with a situation when the food ration is more rigid or even reaches the point where the food is scarce, changes in food habits will have to be made by the non-diabetic as well as by the diabetic. As fat and protein foods become more scarce diabetics and non-diabetics both will eat more of the carbohydrate foods—bread, cereal products, etc. When this happens it will in all probability mean that the diabetic not requiring insulin will begin to use it. The diabetic requiring insulin may have to take more of it. Such a situation can be handled with little discomfort and without interfering with his daily routine work.

Will restrictions in the diet or food subject the diabetic to serious complications such as blindness or gangrene or decrease his life-span of usefulness? The answer is; no, because the possibility of an extensive and general food shortage is very remote in this country. As a matter of fact, our food restrictions may even be an advantage if they result in the eating of only sufficient amounts of essential foods necessary to maintain normal body functions. Such regulations will prevent overeating, especially of protein foods which in many instances cause overweight and all the ailments associated with it.

The diabetic under proper medical supervision, may also benefit by restrictions in diet. It is our opinion that his span of useful life will not be decreased nor will serious complications result.

People are naturally interested in comparing the care of diabetics in other countries, particularly England, Russia, and Germany with our own. In England the diabetics have special rationing of food, but the diabetics are excluded from work. Quoting "The Diabetic Journal," a London quarterly, October, 1942: "In England the diabetic is still, to some extent, excluded from taking up work in public concerns and official departments of the state . . . Eminent doctors have sought to prove that the diabetic is, for all practical intents and purposes, a normal individual. . . ."

In Russia, where the form of government is different, almost the whole of the popula-
(Concluded on Page 214)

Editorial

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FEDERAL MEDICINE?

"Do we need Federal Medicine?" asks the *Saturday Evening Post* editorially,¹ referring to the new social security bill (S. 1161), and more particularly to the section entitled "Federal Medical Hospitalization and Related Benefits."

"From the ambitious nature of the scheme, one might conclude that American medicine had never done anything for the indigent and that the one thing necessary to guarantee good health to all was the creation of a vast scheme for state medicine with more billions to spend than was considered necessary to run the whole country fifteen years ago. Actually, of course, the facts are just the opposite. Although so-called 'organized medicine,' as represented by the A. M. A. bureaucracy, has often failed to respond to the demand for wider distribution of medical care, the actual history of American medicine is a consistent record of expanded service, scientific advance, and social responsibility. All the way from the country doctor, who needs no Federal

salary to get him out on a baby case at three in the morning, to group schemes like the Blue Cross hospital-payment plan, American medicine is trying to meet the health needs of the country. There is still need for progress in rural communities and among the poorer groups, and some medical societies still fail to see the advantages to the profession in prepaid medicine. But the trend is unmistakable and it would be tragic to divert it into politico-bureaucratic channels."

This is common sense. It is common sense where it is most needed, in a publication widely read by the people, the taxpayers, which is at liberty to take what position it pleases on questions of the day. It pleases to say forthrightly what the journals and other publications of organized medicine have been claiming for years: that the "undoubted needs of people who lack adequate medical care" can be taken care of "at a social cost lower than the 'coordination' of all medical services under government aegis."

In April we showed in these columns² the extent of the "participation of the State of New York in medical, health, and welfare services. In these services, the state, the voluntary agencies, and the medical profession conduct a *cooperative enterprise*. . . ." for the indigent and the medically indigent of the state. These services comprise:

- Premarital examination of prospective fathers and mothers.
- Maternal welfare
 - (a) Treatment for syphilis
 - (b) Obstetric care
 - (c) Postpartum care
- Treatment of Ophthalmia neonatorum
- Well-baby clinics
- Immunization services of various kinds
- Care and rehabilitation of poliomyelitis patients
- School medical services
 - (a) Physical examination
 - (b) Health education
 - (c) Specific medical services where needed
- Special schools for handicapped children
- Dental clinics in schools
- Lunches, milk and transportation for school children
- Industrial hygiene supervision and rehabilitation
- Workmen's compensation insurance
- Medical care of the indigent
- Old age assistance

Institutions providing care under state auspices are:

1. Sept. 25, 1943, p. 112.

2. New York State J. Med. 43: 610 (April 1) 1943.

General hospitals, their clinics and wards
 Mental hospitals
 Tuberculosis hospitals
 Cardiac institutions
 Veterans' hospitals

Agencies supervising or assisting in provision of state care are:

State Health Department
 State Welfare Department
 Local welfare and health departments
 State Education Department
 State Department of Labor
 State Department of Insurance
 Public Health Nurses' Association
 State Medical Society, local branches and county societies

Tuberculosis Association
 Cancer Committee
 Hospital expense insurance plans
 Medical expense insurance plans
 Industrial mutual aid plans

Diseases for which the state has assumed full or partial responsibility are:

Poliomyelitis
 Tuberculosis
 Blindness
 Mental and nervous diseases
 Cancer
 Deafness
 Cardiac disease

In addition, as the *Post* rightly adds: "Group medical service is growing rapidly around hospitals, business and industrial establishments, local political entities, and so on. To us, such schemes, with Federal support where needed, seem the reasonable way to bring about whatever changes are necessary in medical practice—natural evolution as opposed to some New Deal miracle having the typical political characteristics of unlimited promise and meager performance."

Medical expense indemnity insurance is already well under way, both the nonprofit organizations and a few commercial ventures in this field. Thus the lower income brackets above the level of indigency are being provided, as rapidly as seems consistent with sound actuarial practice and financing, with the opportunity to protect themselves from medical and surgical catastrophes.

As the *Post* continues: "If we can manage to keep our shirts on, the United States will shortly have plenty of group medicine, and with no fear that professional standards, local responsibility, and enthusiasm in experiment will be engulfed in a wave of bureaucracy."

Homely, common sense. More of the same wanted.

Editorial, *N. Y. S. J. M.*, November, 1, 1943.

DIGEST OF WAGNER BILL

Now pending in the U. S. Congress is the long-promised proposal of Senator Wagner of New York to broaden the Social Security program to include medical and hospital services—a compulsory sickness insurance bill. The bill—S. 1161—has been referred to the Senate Committee on Finance. Following is an analysis of the measure prepared by the Bureau of Legal Medicine and Legislation of the American Medical Association and excerpts from an editorial on the proposal, published in the June 26, 1943, issue of *The Journal of the American Medical Association*.

A. M. A. Analysis

Referred to generally as embodying an Americanized Beveridge plan but offered in Congress, according to Senator Wagner, "simply as a basis for legislative study and consideration," legislation was introduced June 3 in the Senate by Senator Wagner, New York, for himself and Senator Murray, Montana, and in the House by Representative Dingell, Michigan, proposing to create a Unified National Social Insurance System (S. 1161; H. R. 2861). The Senate bill is pending in the Senate Committee on Finance and the House bill in the House Committee of Ways and Means.

The system proposed to be created will be financed in general from a trust fund established by a 6 per cent employee and a 6 per cent employer contribution on all wages and salaries, up to the first \$3,000 a year, paid or received after December 31, 1943. Included in this proposed system will be a system of public employment offices, increased old age and survivors' insurance benefits, temporary and permanent disability insurance benefits, protection to individuals in the military service, increased unemployment insurance benefits under a federalized unemployment system, maternity benefits, medical and hospitalization insurance benefits, a broadening of the basis of the existing social security program to embrace some 15,000,000 persons now excluded, such as farm workers and domestic servants, employees of nonprofit institutions, independent farmers, members of the professions and other self-employed individuals, and a unified public assistance program. There follows an analysis of

those provisions of the ninety page bill that appear to be of particular concern to medicine.

Disability Benefits Plus Medical Care

The bill broadens the existing social security coverage by providing for the payment of cash permanent disability benefits to beneficiaries. In addition to such cash benefits, the Social Security Board, through the Surgeon General of the Public Health Service, will be authorized to make provision for furnishing medical, surgical, institutional, rehabilitation or other services to disabled individuals, entitled to receive insurance benefits, if such services will aid in enabling such individuals to return to gainful work. Such services, it is contemplated, will be furnished "by qualified practitioners and through governmental and nongovernmental hospitals and other institutions qualified to furnish such services." In administering the provisions of this particular section of the bill, the Surgeon General and the Social Security Board will follow as far as applicable the procedure outlined by another section of the bill relating to medical, hospitalization and related benefits generally.

Medical, Hospitalization and Related Benefits in General

Section II of the bill proposes to add a new title to the Social Security Act, title IX, providing for a federal system of compulsory medical and hospitalization insurance for all persons covered under the old age and survivors' insurance, and their dependents. Each insured worker and his dependent wife and children will be entitled to receive general medical, special medical, laboratory and hospitalization benefits. In addition, the system is made elastic so that it may be enlarged in its coverage to admit other beneficiaries on a voluntary basis, such as self-employed individuals and employees of state and political subdivisions.

In order to appreciate the broad scope of this new title, consideration must initially be given to the meaning of the words and phrases used in it. The term "general medical benefit" means services furnished by a legally qualified physician, including all necessary services such as can be furnished by a physi-

cian engaged in the general practice of medicine, at the office, home, hospital or elsewhere, including preventive, diagnostic and therapeutic treatment and care, and periodic physical examinations.

The term "special medical benefit" means necessary services requiring special skill or experience, furnished at the office, home, hospital or elsewhere by a legally qualified physician who is a specialist with respect to the class of service furnished.

The term "laboratory benefit" means such necessary laboratory or related services, supplies or commodities, not provided to a hospitalized patient and not included as a part of the general or special medical benefit, as the Surgeon General of the United States Public Health Service may determine, including chemical, bacteriologic, pathologic, diagnostic and therapeutic X-ray and related laboratory services, physical therapy, special appliances prescribed by a physician, and eye glasses prescribed by a physician "or other legally qualified practitioner."

The term "hospitalization benefit" means (1) not less than \$3 and not more than \$6 for each day of hospitalization, not in excess of thirty days, which an individual has had in a period of hospitalization; (2) not less than \$1.50 and not more than \$4 for each day of hospitalization in excess of thirty in a period of hospitalization; and (3) not less than \$1.50 and not more than \$3 for each day of care in an institution for the care of persons suffering from chronic ailments. The exact amount of the benefits between the minimums and maximums stated will be fixed by the Surgeon General of the Public Health Service after consultation with the National Advisory Medical and Hospital Council to be created by the bill and after approval by the Social Security Board. In lieu of such compensation, the Surgeon General may, after approval of the Social Security Board enter into contracts with participating hospitals for the payment of the reasonable cost of hospital service, at rates for each day of hospitalization neither less than the minimum nor more than the maximum applicable rates previously mentioned. Such payments will constitute full reimbursement, the bill provides, for the cost of essential hospital services, including the

use of ward or "other least expensive facilities compatible with the proper care of the patient."

Panel of Physicians to Supply Medical Care

The Surgeon General will be required to publish and otherwise make known in each area to individuals entitled to benefits the names of general practitioners who have signified their willingness or desire to participate in the insurance program. Any legally qualified physician may so participate. A beneficiary may select any physician appearing on the panel to treat him subject to the consent of the physician selected, and may change such selection in accordance with such rules and regulations as may be prescribed. The Surgeon General may set maximum limits to the number of potential beneficiaries for whom a general practitioner may undertake to furnish medical benefits. Such limits may be nationally uniform or may be adapted to take account of "relevant factors."

The services of specialists will ordinarily be available only on the advice of the general practitioner. The Surgeon General will determine what constitutes specialist services and will also determine the qualifications of physicians as specialists "in accordance with general standards previously prescribed by him after consultation with the council and utilizing standards and certifications developed by competent professional agencies."

Payments for the Services of Physicians

Payments to general practitioners may be made (1) on the basis of fees for services rendered, according to a fee schedule approved by the Surgeon General; or (2) on a per capita basis, the amount being according to the number of individuals entitled to benefits who are on the practitioners list; or (3) on a salary basis, whole or part time; or (4) on a combination or modification of these bases. The method of payment, subject to the approval of the Surgeon General, will apparently be determined in each area in accordance with the desires of a majority of the general practitioners collaborating with the insurance program.

Payments to designated specialists may include payments on salary (whole time or part

time), "per session," fee for service, per capita, or other basis, or combinations thereof. Apparently the method of payment to be adopted for specialists will be determined by the Surgeon General.

Payments for medical service may be nationally uniform or may be adapted to take account of "relevant factors." In any area where payment for the services of a general practitioner is on a per capita basis, the bill provides that the Surgeon General shall distribute on a pro rata basis among the practitioners of the area on the panel those individuals in the area who, after due notice, have failed to select a general practitioner or who, having made a selection, have been refused by the practitioner.

The bill provides that in each area the provision of general medical benefit for all individuals entitled to receive such benefit "shall be a collective responsibility of all qualified general practitioners in the area who have undertaken to furnish such benefit."

Limitations on General Medical and Laboratory Benefit

The Surgeon General and the Social Security Board may determine for any calendar year or part thereof that every individual entitled to general medical benefit may be required by the physician attending him to pay a fee with respect to the first service or with respect to each service in a "spell of sickness" or course of treatment if it is believed that such a determination is necessary and desirable to prevent or reduce abuses of entitlement to such benefits. Maximum size of such fee may be fixed by the Surgeon General and the Social Security Board at an amount estimated to be sufficient to prevent or reduce abuses and not such as to impose a substantial restraint against proper and needed receipt of medical benefit. Likewise the Surgeon General and the Social Security Board may limit the application of such fees to home calls, office visits or both.

Participating Hospitals

For a hospital to participate in this insurance program, it must have been approved by the Surgeon General under standards prescribed by him after consultation with the council. A hospital to be approved must pro-

vide all necessary and customary hospital services and must be found to afford professional service, personnel and equipment adequate to promote the health and safety of individuals customarily hospitalized in such institution. The Surgeon General may approve or accredit a hospital for limited varieties of cases and may accredit an institution for the care of the "chronic sick." In determining the adequacy of the professional service, personnel and equipment of any such institution, the Surgeon General may take into account the purpose of such limited accrediting, the type and size of community which the institution serves, the availability of other hospital facilities, and such other matters as he may deem relevant.

Application for and Limitation of Hospitalization Benefits

No application by an individual for hospitalization benefits will be valid with respect to any day of hospitalization if the application is filed more than ninety days after such day, or with respect to any day of hospitalization for mental or nervous disease or for tuberculosis after such diagnosis has been made. The maximum number of days in any benefit year for which any individual may be entitled to hospitalization benefit will be thirty. If, however, the funds in the special hospitalization benefit account fund to be created prove adequate, the maximum number of days may be increased to ninety by the Surgeon General and the Social Security Board, acting jointly.

Proposed Method of Administration

The Surgeon General of the Public Health Service will be authorized to take all necessary and practical steps to arrange for the availability of the medical hospitalization and related benefits. He will be authorized to negotiate and periodically to re-negotiate agreements or cooperative working arrangements with appropriate agencies of the United States, or of any state or political subdivision thereof, and with other appropriate public agencies, and with private agencies or institutions, and with private persons or groups of persons, to utilize their services and facilities and to pay fair, reasonable and equitable compensation therefor.

The methods of administration, including the methods of payment to practitioners, the bill provides, shall (1) insure the prompt and efficient care of individuals entitled to benefits; (2) promote personal relationships between physician and patient; (3) provide professional and financial incentives for the professional advancement of practitioners, and encourage high standards in the quality of services furnished as benefits through the adequacy of payments to practitioners, assistance in their use of opportunities for post-graduate study, coordination among the services furnished by general practitioners, specialists, laboratory and other auxiliary services, coordination among the services furnished by practitioners, hospitals, health centers, educational, research and other institutions, and between preventive and curative services, and otherwise; (4) aid in the prevention of disease, disability and premature death, and (5) insure the provision of adequate service with the greatest economy consistent with high standards of quality.

National Advisory Medical and Hospital Council

The bill proposes the creation of a National Advisory Medical and Hospital Council, to consist of the Surgeon General of the United States Public Health Service as chairman and sixteen members appointed by him. The appointed members will be selected from panels of names submitted by the professional and other agencies and organizations concerned with medical services and education and with the operation of hospitals and from among other persons, agencies or organizations informed on the need for or provision of medical, hospital or related services and benefits. Appointed members will hold office for four years, with the terms of office staggered. The appointed members will receive compensation at the rate of \$25 a day for time spent on official business of the council, and actual and necessary traveling expenses and per diem in lieu of subsistence.

This council will "advise" the Surgeon General as to (1) professional standards of quality to apply to general and special medical benefits; (2) designation of specialists; (3) methods and arrangements to stimulate

and encourage the attainment of high standards through coordination of the services of general practitioners, specialists, laboratories and other auxiliary services, and through the coordination of the services of practitioners with those of educational and research institutions, hospitals and health centers, and through other useful means; (4) standards to apply to participating hospitals and to establishment and maintenance of the list of participating hospitals; (5) adequate and suitable methods and arrangements of paying for medical and hospital services; (6) studies and surveys of the services furnished by practitioners and hospitals and of the quality and adequacy of such services; (7) grants-in-aid for professional education and research projects, and (8) establishment of special advisory, technical, local or regional boards, committees, or commissions.

Relation to Workmen's Compensation Acts

The benefits provided by this bill will not be available with respect to an injury, disease or disability coming within the purview of any state or federal workmen's compensation act.

Dental, Nursing and Other Benefits

The bill devolves on the Surgeon General and the Social Security Board jointly the duty of ascertaining the most effective methods of providing dental, nursing and other needed benefits not contained in the pending bill and of determining the expected costs of such additional benefits. The bill contemplates that the Surgeon General and the Social Security Board will report the results of their findings, with recommendations as to legislation, not later than January 1, 1946.

Grants-in-Aid for Medical Education, Research and Prevention of Disease and Disability

The Surgeon General will be authorized to administer grants-in-aid to nonprofit institutions and agencies engaging in research or in undergraduate or postgraduate professional education. The purpose of these grants will be to encourage and aid the advancement and dissemination of knowledge and skill in providing benefits and in preventing illness, disability and premature death. Such grants-in-aid will be made with respect to each

project (1) for which application has been received from a nonprofit institution or agency, stating the nature of the project and giving the reasons for the need of financial assistance in carrying it out, and (2) for which the Surgeon General finds, with the advice of the council, that the project shows promise of making valuable contributions to the education or training of persons useful to or needed in the furnishing of medical, hospital, disability, rehabilitation and related benefits or to human knowledge with respect to the cause, prevention, mitigation or methods of diagnosis and treatment of disease and disability.

This part of the program will be financed by setting aside a certain percentage of amounts expended for benefits from the Federal Social Insurance Trust Fund to be created by the bill. The amount to be set aside will equal 1 per cent of the total amount expended for benefits from the trust fund, exclusive of unemployment insurance benefits, or 2 per cent of the amount expended for benefits under title IX (relating to federal medical, hospitalization and related benefits), after benefits under that title have been payable for not less than twelve months, whichever is the lesser, in the last preceding fiscal year. The bill apparently leaves all the details with respect to these grants-in-aid to regulations to be promulgated by the Surgeon General after consultation with the council.

Self-Employed Individuals

Self-employed individuals may receive the benefits of the old age, survivors, and permanent disability and medical and hospital insurance by paying into the Trust Fund an amount equal to 7 per cent of the market value of their services rendered as self-employed individuals, after December 31, 1943, with respect to services in self-employment after that date, but not including that part of any remuneration for employment and the market value of services in self-employment in excess of \$3,000 for any calendar year.

Employees of States and Local Subdivisions

The bill authorizes the Social Security Board to enter into compacts with individual states or with political subdivisions for the

purpose of extending old age, survivors, and permanent disability and medical and hospitalization insurance coverage to employees of such states or political subdivisions. To finance the benefits to be provided under such compacts, the bill requires such employer to pay a social security contribution equal to 3.5 per cent of the wages paid by it after December 31, 1943, and every individual beneficiary of such a compact a contribution equal to 3.5 per cent of the wages received by him after December 31, 1943, excluding any amount paid or received in excess of \$3,000 during any calendar year after December 31, 1943.

Bill as Viewed by Senator Wagner

On the floor of the Senate, June 3, Senator Wagner described the over-all objectives of his bill as follows:

The bill establishes a nation-wide system of public employment offices, to help war workers and war veterans to avail themselves of job opportunities, in private industry and on farms, throughout the country. It covers broadly the major economic hazards of average American families—the cost of medical and hospital care, and loss of income in time of unemployment, temporary sickness, permanent disability and old age. It improves the present old age insurance system and extends coverage to 15,000,000 persons now excluded, such as farm workers and domestic servants, employees of nonprofit institutions and the independent farmer, professional and small businessmen. All these changes are established under a unified national system of social insurance, with one set of contributions, one set of records and reports and one set of local offices. Reinforcing the job guaranty in the Selective Service Act, the bill gives the returning veteran and his family paid-up benefit rights in every phase of this insurance protection. And, finally, the bill sets up an improved, unified system for grants-in-aid to the states for public assistance, on a variable matching basis, in place of the rigid categories under present law.

Prospect of Senate Consideration of the Bill

Senator Walter F. George, chairman of the Senate Committee on Finance, before which

S. 1161 is pending, has been quoted as saying that his committee cannot possibly undertake to give consideration to the bill until late in the present session of the Congress and that if that consideration is given, and if favorable action is taken by the committee, the measure will not reach the floor of the Senate until next year.

Comments of The Journal A. M. A.

Commenting editorially on the new Wagner bill, *The Journal of the American Medical Association* said in part:

"The Board of Trustees and the newly-created Council on Medical Service and Public Relations of the American Medical Association will, no doubt, give careful consideration in the near future to the policy of the Association regarding this specific measure. Arrangements will probably be considered for representation at hearings before the appropriate committees of the Senate and the House. Announcement made by the chairman of the committees of the Senate and of the House in charge of the bill indicate that this legislation is not likely to come for consideration previously to the next session of Congress. In the meantime physicians should inform themselves concerning its genesis and its objectives.

"In its evolution the Wagner-Murray-Dingell bill stems from the National Health Conference of 1937, the Wagner bill which followed that conference, and the report of the National Resources Planning Board. Essentially in its medical aspects it is a compulsory sickness insurance bill and an attempt to translate the proposals of the Social Security Board into a technique of action. Inquiry of reliable sources in Washington indicates the probability that the actual designers and authors of the bill included I. S. Falk, director of the Bureau of Research and Statistics of the Social Security Board of the Federal Security Administration; Mr. Wilbur J. Cohen, technical adviser to the Social Security Board, and Senator Wagner's secretary, Mr. Philip Levy. A statement issued by William Green, president of the American Federation of Labor, says, 'The measure which is the most comprehensive attempt yet made to establish postwar security in this

country, is the fruit of a five-year study by experts on the staff of the American Federation of Labor, which will give the proposed program full sponsorship and support.' Inquiry also reveals that, as far as can be determined, representatives of the medical profession, either within or without the government, were not consulted in the development of the medical provisions. Evidence of this failure to consult the medical profession appears in the language of the proposed bill, since it speaks twice of a 'spell of sickness.' The word 'spell,' thus employed, does not appear in English dictionaries except as a colloquialism in Webster, and the term is seldom, if ever, used by any one educated in medicine.

"A study of the analysis by the Bureau of Legal Medicine and Legislation will reveal to the medical reader the terms of the proposal. Speaking bluntly, however, the measure apparently attempts to avoid the innumerable difficulties involved in developing a government controlled medical service by making the Surgeon General of the Public Health Service, whoever he might be, a virtual 'gauleiter' of American medicine. Indeed, it is doubtful if even Nazidom confers on its 'gauleiter' Conti the powers which this measure would confer on the Surgeon General of the U. S. Public Health Service. Here are some quotes:

"'Extensive' Powers Granted"

"'The Surgeon General of the Public Health Service is hereby authorized and directed to take all necessary practical steps to arrange for the availability of the benefits provided under this title. . .

"'. . . The Surgeon General is hereby authorized to negotiate and periodically to re-negotiate agreements or cooperative working arrangements with appropriate agencies of the United States, or of any state or political subdivision thereof, and with other appropriate public agencies, and with private agencies or institutions, and with private persons or groups of persons, to utilize their services and facilities and to pay fair, reasonable and equitable compensation for such services or facilities. . .

"'There is hereby established a National Advisory Medical and Hospital Council to

consist of the Surgeon General as Chairman and sixteen members to be appointed by the Surgeon General.

"'The Surgeon General shall publish and otherwise make known in each area to individuals entitled to benefit under this title the names of general practitioners who have agreed to furnish services. . . .

"'Services which shall be deemed to be specialist services shall be those so designated by the Surgeon General, and the practitioners from among those included in paragraph 1 above who shall be qualified as specialists and entitled to the compensation provided for specialists shall be those so designated by him as qualify to furnish such specialist services. . . .

"'Payments from the Trust Fund to general practitioners . . . shall be made on the basis of fees for services rendered to individuals entitled to benefits, according to a fee schedule approved by the Surgeon General. . . .

"'The Surgeon General may prescribe the maximum limits to the number of potential beneficiaries for whom a practitioner may undertake to furnish general medical benefit. . . .

"'The Surgeon General is hereby authorized to establish necessary and sufficient hearing and appeal bodies. . . .

"'The Surgeon General shall publish a list of institutions found by him to be participating hospitals. . . . Inclusion of an institution upon such a list shall, unless and until withdrawn by him, be conclusive. . . .

"'The Surgeon General and the Social Security Board may . . . determine for any calendar year . . . that every individual entitled to general medical benefit may be required by the physician furnishing such benefit to pay a fee with respect to the first service or with respect to each service in a spell of sickness or course of treatment.

"'The Surgeon General and the Social Security Board jointly shall have the duty of studying and making recommendations as to the most effective methods of providing dental, nursing and other needed benefits. . . .

“The Surgeon General, after consultation with the Social Security Board, and with the approval of the Federal Security Administration, shall make and publish such rules and regulations . . . necessary to the efficient administration. . . .

“The term ‘laboratory benefit’ means such necessary laboratory or related services, supplies or commodities . . . as the Surgeon General may determine, including chemical, bacteriological, pathological, diagnostic and therapeutic X-ray, and related laboratory services, physiotherapy, special appliances prescribed by a physician, and eye glasses prescribed by a physician or other legally qualified practitioner.

“With respect to inclusion in the list of participating hospitals the Surgeon General may accredit a hospital for limited varieties of cases and may accredit an institution for the care of the chronic sick. . . .’

“This list is not all inclusive. There are many other points which space does not permit to be included in an editorial.

“‘Free Choice’—Perhaps

“In offering the bill, its proponents emphasize that it provides for free choice of doctors; free choice of a doctor means, of course, free choice of doctors willing to engage in this type of work.

“The proposed measure has already been discussed editorially by such newspapers as the Washington Star and the Chicago Daily News, both of which pointed out that its passage would accumulate, at least for the present, deductions from many workers’ wages of 20 per cent for income tax, 10 to 25 per cent for war bonds, 12 per cent for social security and such other special deductions as are already made in many individual plants. According to these figures there would be a minimum deduction of 42 per cent and a maximum deduction of 57 per cent of the worker’s wages. The Chicago Daily News said:

“‘We suspect that zeal for social security in the sweet by and by will have a hard time surmounting the shriveled paycheck already here, with the future shrinkage now plainly in sight.’”

A Letter From Surgeon-General Parran

July 19, 1943.

Doctor R. B. Robins,
111 Van Buren Street,
Camden, Arkansas.

Dear Doctor Robins:

I am in receipt of your letter of July 10 requesting my comment on Senate bill 1161, and asking whether I favor it or not.

There are a number of considerations which would prevent me from accepting this bill as it stands at present. There is, for example, the question as to whether a compulsory health (or sickness) insurance scheme is the best method for improving the health of the people. I believe other plans should be explored and the advantages and disadvantages of the several methods freely discussed.

I feel also that everything possible should be done to elicit constructive suggestions from outstanding leaders in the medical profession, and that the physicians now serving in the armed forces should have an opportunity to express themselves regarding plans which would greatly affect their professional careers.

There are a number of other questions which I feel should receive most careful consideration before specific action is taken, but the above may be sufficient for any purpose you have in mind.

Sincerely yours,

Signed: Thomas Parran,
Surgeon General,
U. S. Public Health Service.

The opportunity offered by routine X-ray or fluoroscopic chest examinations of adult admissions to general hospitals as a source of tuberculosis case finding has not been fully utilized. In a recent survey in a New York hospital tuberculosis was found in approximately 4% of the patients. These cases would not otherwise have been detected. Of these 2.8% had reinfection disease and 0.6% had active or questionably active disease requiring hospitalization or close observation. William G. Childress, M. D. et al. *Jour. Amer. Med. Assn.*, Aug. 14, 1943.

"War Food and Diabetes"**(Concluded from Page 204)*

tion consists of government employees. Quoting from the London Diabetic Journal: "The people are employed by a state which is their own, so that they employ themselves. . . . every position in the factory is a government position and hence it is impossible for any ban on diabetes to exist . . . and most diabetics can stand the strain of normal jobs demanding physical strain." Russia provides adequate facilities for the treatment of diabetics, as well as conducting extensive research into the prevention and possible cure of diabetes. Again quoting from the London Diabetic Journal: "In the large factories and the dispensaries dietitians are appointed, and special booklets are published giving a clear exposition of the disease and the basis of dietetic treatment. Factory canteens supply food at reduced rates (or free, if necessary) for people requiring special diets. Dietetic treatment without the use of insulin is considered of great importance, and research is being continually undertaken in this direction."

In Germany the diabetics are faced with a serious situation—insulin is rationed and food is scarce. This condition also appears to hold in the occupied countries. Quoting from the London Diabetic Journal: "The German nation has no interest in giving special aid to diabetics who, as is well known, are very expensive. (Vertranensart and Krankenkasse)." "The authorities also urged that diabetics should be induced to submit to voluntary sterilization. Patients who refused to submit . . . ought to be deprived of medical treatment."

The diabetic of today under adequate medical care looks normal and acts normal and is doing his patriotic duty in our present war. In our own country where the diabetic is free to do as he pleases, he is treated as a normal person. Diabetics, alongside of non-diabetics, are doing their share in our present emergency helping to make tanks, guns, munitions, and ships to win the war. As a matter of fact, their absentee record in many instances is better than that of the non-diabetics. In every respect their contributions to the war effort are of the highest significance.

1315 Pine St., Phila., Pa.

MATERNAL AND CHILD WELFARE PROGRAM DISCONTINUED BY STATE BOARD OF HEALTH

At its meeting October 14th, the Arkansas State Board of Health voted to discontinue participation in the Federal program for obstetric and pediatric care of the wives and infants of enlisted men. The effective date for discontinuance will be when the October allotment of funds has been allocated by the State Board of Health, which is not expected to be later than November 1st. After that time, no further applications will be accepted although all obligations which have been incurred and approved will be paid as they come due through rendition of services.

The medical profession has been placed in a most unfortunate dilemma by imposition of this Federal plan. On the one hand, physicians cannot accept the plan as offered without submission to the dictates of a governmental agency, while on the other hand, they will find it difficult to seem to deny the families of service men benefits which are offered them, benefits which, it is felt, would have been theirs, governmental plan or not.

The principal objections of the medical profession to the plan is that it compels physicians to serve a considerable number of their patients seeking maternal and pediatric care at a fee established by governmental agency; that it does not consider the need for financial assistance; that it denies both the physicians and the patient the right to mutually arrange for supplementation of this fee; that the fee is all-inclusive with no provision for complications which may ensue, and that the fees set are below the reasonable value of the services.

The medical profession does not need to call attention to the fact that it has been glad to serve the public for compensation within the limits of the public's ability to pay. Many of our citizens are served without fee of any kind. The dependents of enlisted men will continue to receive medical care in the traditional manner. The physicians of Arkansas do not intend to permit the family of any enlisted man to suffer from the lack of medical care, whether such be obstetric, pediatric, surgical or medical.

Editorial, *J. Ark. M. S.*, November, 1943

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*Himes, *Medical History of Contraception*



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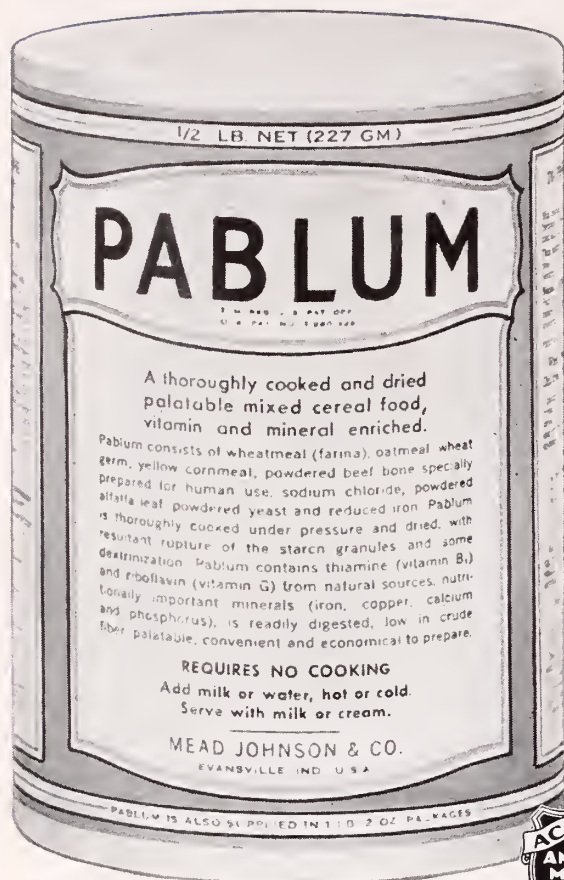


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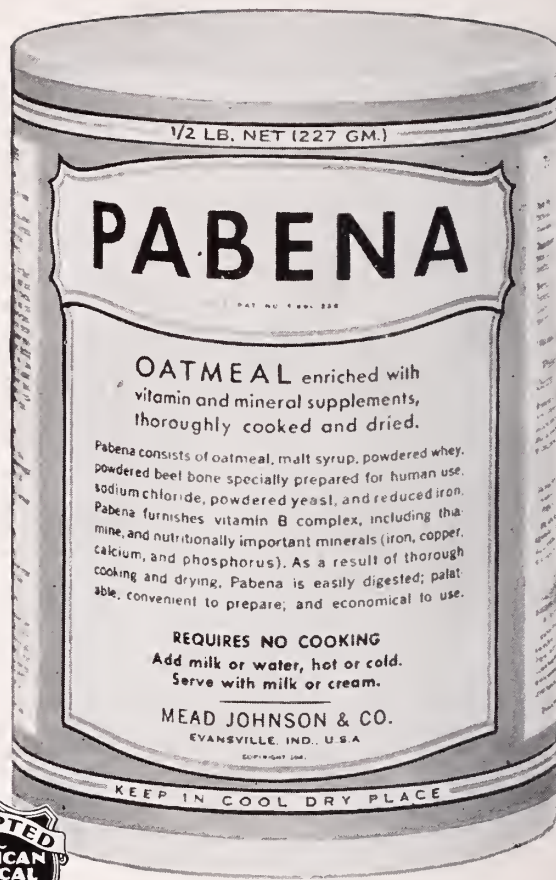
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STREPTOCOCCUS VIRIDANS BACTEREMIA*

Report of Case

CHARLES LEVY, M. D.,**
Wilmington, Del.

The streptococcus viridans is an organism found commonly in the abscesses of teeth, of tonsils, and in sinus focal infection. It is called the green colony streptococcus. It is a non-motile spherical organism, unencapsulated, occurring in short chains, and its staining quality is gram positive. On blood agar the colony is found with a zone of partial hemolysis around the green area. In the case I am to present the streptococcus viridans was isolated from the blood stream. The culture medium used, however, was tryptose-phosphate both containing 0.05% agar and 5 mgm. of para-aminobenzoic acid per 100 cc. of broth.

CASE HISTORY

Mrs. M. M., aged 24 years, an only child, was apparently in good health until June 18, 1943. Her mother is living and well. Her father died of rheumatic heart disease, at the age of 32 years. Our patient had measles and whooping cough at the age of 10 years, and one year later suffered a very disabling attack of rheumatic fever. She was in bed for almost one year, after which time she went about as other children, but was definitely restricted in regard to physical activities. There had been no recurrences of rheumatic fever, but the patient had had many and frequent attacks of sore throat. In June, 1942 the tonsils were removed, and since then the frequency of sore throats has diminished.

The onset of the present illness was June 18, 1943. The chief complaints were headache, malaise, and sore throat. She consulted a nose and throat specialist, who, on noting the elevated temperature, advised bed rest and recommended that the family physician

be called. The patient was first seen on June 20th, two days later. Temperature then was 100° F.; pulse rate, 80. The pharynx was slightly reddened. There was no evidence of tonsil tissue. The lungs were clear throughout. Physical examination further revealed that the heart was definitely enlarged to the left. The apex impulse was in the mid-axillary region. There was a rumbling, diastolic murmur at the apex with a snapping first sound, and a loud blowing murmur at the base of the heart, also diastolic in time. (The patient was a known case of rheumatic heart disease with mitral stenosis and aortic insufficiency.) The blood pressure was 130/60. The abdominal examination was negative.

Salicylates were given for the present complaint, and the patient watched daily. The temperature continued elevated and irregular. The range was from 99 to 100° F. Because of the poor response of salicylates after a period of four days, the previous impression of a mild upper respiratory infection was altered and a more serious outlook was then entertained. Sulfadiazine was ordered and the patient was instructed not to take the drug until blood had been removed for study. A complete blood count and differential, a blood culture, and a sedimentation index were done. This was on June 23rd. The dose of the sulfadiazine ordered was 2 gms., with 20 grs. of sodium bicarbonate, to be followed by 1 gm. every four hours, with 10 grs. of sodium bicarbonate.

On the following day the blood reports were as follows: Red blood count, 4.7 million; hemoglobin 97% (14.5 gms.); white blood count, 7,700; neutrophils 67%, lymphocytes 30%; monocytes 3%. The sedimentation index was 6 mm. The blood culture was positive for streptococcus viridans, mitior variety. Five days later, on June 28th, more blood studies were done. The count showed a slight decrease in red blood cells and hemoglobin, but was otherwise normal. The red

* Read before the Medical Society of Delaware, Wilmington, October 13, 1943.

** Acting Chief of Medical Service, St. Francis and Wilmington General Hospitals.

blood count was 4 million; the hemoglobin was 80% (12.5 gm.); white blood count 7,100; blood platelets 234,000. The sulfadiazine level was 12 mgms. per cent. The blood culture was now sterile. The temperature remained elevated and reached the normal line for the first time on June 29th, that is, six days after the beginning of sulfadiazine therapy. On the following day the temperature rose again to 100, but quickly returned to normal and has remained normal ever since. On July 7th the blood count showed: red blood count 4.5 million; hemoglobin 80% (12 gms); white blood count, 5,000; differential normal. The blood culture was negative. The sulfadiazine was 14.4 mgms. per cent.

The patient was kept at absolute bed rest until July 11th, sulfadiazine being continued. On the latter date, the patient was allowed to travel to Atlantic City. She remained in bed there for another week, taking sulfadiazine three times a day, and on the following week was allowed out of bed, continuing the drug, twice a day. On July 19th, the red blood count was 4.3 million; hemoglobin 77.9%; white blood count, 6,000. The blood culture was again sterile. The sulfadiazine level was 4.3 mgms. per cent. The only subjective complaint during the entire period was weakness. There were no joint pains, no petechiae, no splenic enlargement, no hematuria, no painful finger tips, no embolic phenomena. At the present time patient is perfectly well. She has not had any elevation of temperature since June 30th. Recent blood counts, on July 28th and August 26th, were both normal.

DISCUSSION

A case of blood stream infection, due to the streptococcus viridans, with recovery, has been presented. I refrained from making a diagnosis of subacute bacterial endocarditis because of those criteria, just mentioned, which are considered essential to make such a diagnosis. Cures, however, are rare, if the latter diagnosis is reserved for cases displaying a complete picture. George F. Dick reported one case recently that recovered from subacute bacterial endocarditis following intravenous sulfadiazine therapy. Carter Smith, Sauls and Stone gave an excellent report of the present status of previously reported cures. They found 35 cured cases.

The factors stressed as most important are: (1) an early diagnosis before the organisms nilamide. In addition, there are some isolae can protect themselves with a thick fibrin wall; and (2) a high concentration of sulfated individual reports. I do soundly believe that if sulfanilamide therapy had been withheld from this patient the streptococcus would have gained a foothold upon the previously diseased heart valves. The soil was ripe. These valves, with the irregularity of their margins, containing vegetations, provided a location for the implantation of the streptococcus. The fibrin and the platelets deposited on the damaged valves provided an ideal culture medium as well as a barrier against those protective forces of nature and the present widely used chemotherapy agents. It is recognized that patients who have valvular lesions and are fully compensated are considered candidates for subacute bacterial endocarditis. Consequently, when I learned that the blood culture in this case of rheumatic heart disease with mitral stenosis and aortic insufficiency was positive, I felt that she was elected.

The lesion I wish to bring out by the presentation of this one case is that upper respiratory infection in cases of rheumatic carditis can be most serious. Prophylaxis is important; early and thorough treatment of upper respiratory infection is essential and may prevent the development of subacute bacterial endocarditis with its grave prognosis.

SUMMARY

(1) A case of streptococcus viridans bacteremia in a known case of rheumatic heart disease has been presented.

(2) A plea is raised to consider seriously all supposedly minor upper respiratory infections in patients with valvular lesions, because of their predisposition to subacute bacterial endocarditis.

(3) The sulfonamides are at present the best group of drugs to combat streptococcus viridans infections. Early and prolonged treatment is, however, essential, and a cure is best obtained during the bacteremic stage before the bacteria are protected by the fibrinous vegetations on the valves.

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MEDICAL SOCIETY OF DELAWARE PROCEEDINGS: 1943

The 154th Annual Session of the Medical Society of Delaware was convened at the Delaware Academy of Medicine, Wilmington, Tuesday, October 12, 1942, at 2 P. M.

PRESIDENT LAWRENCE J. JONES (Wilmington): If the meeting will come to order I will ask the Reverend Charles W. Clash, Rector of Immanuel P. E. Church, Wilmington, to give the Invocation.

REV. CHARLES W. CLASH, D. D.: Almighty God, who sent thy Blessed Son to be the great physician of souls and bodies, look we beseech Thee, upon thy servants, the physicians and surgeons. Bless the remedies they employ, help them to remember that in administering to others they administer to Thee. Help and endow them with the strength and knowledge that they may administer to ourselves and our fellows, giving us healthy minds and sound bodies, through Jesus Christ our Lord. Amen.

PRESIDENT JONES: The Address of Welcome will be given by Mr. Leonard G. Hagner, City Solicitor. Mayor James is unavoidably detained with city business and will not be able to attend. Mr. Hagner.

MR. LEONARD G. HAGNER (Wilmington): Mr. Chairman, and members of the Medical Society of Delaware.

The Mayor, unfortunately, was unable to come out this afternoon and he asked me to come and in a few words express his regret that he would not be able to be here. Personally, I am pleased to have the honor and pleasure of extending the greetings of the city of Wilmington. I think that I may also express the gratitude of the city of Wilmington for what the members of this Society are now doing under conditions which approach those of hardship, and also congratulate this Society for the splendid response which the members have made to the national call to service. I noticed on the flag outside that 95 members are in the service. That, I think, is a fine representation of this Society and as far as I can, I wish to congratulate you in behalf of the people of the city of Wilmington for that service, and I also want to thank the doctors who are here today for carrying on the service on the home front, for with so many of those men away it means a greater sacrifice for you. I know you are all meeting this emergency in a commendable way and I am very glad to be able to thank those physicians for the fine service which they are doing.

Following this the Presidential address was given by Dr. Lawrence J. Jones, Wilmington, which was entitled "The Responsibility and Future of Organized Medicine." There was no discussion of Dr. Jones' paper.

Dr. William P. Belk, Pathologist of the Episcopal Hospital, Philadelphia, then presented a paper on "The Clinical and Laboratory Management of Nephritis." Dr. Belk's paper was discussed by Dr. Frederick A. Hemsath.

Dr. Anthony J. Sindoni, Jr., Chief, Department of Metabolism, Philadelphia General Hospital, Philadelphia, presented a paper on "War Foods and Diabetes." Dr. Sindoni's paper was discussed by Dr. Arthur B. Gruver.

Captain Louis C. LeSieur, M. C., U. S. Army, Aviation Medical Officer, New Castle Army Air Base, Wilmington, presented a paper on "Aviation Medicine and High Altitude Flying," along with which he showed a very interesting moving picture. Capt. LeSieur's paper was discussed by Drs. Thomas Hynes, W. Edwin Bird, and Edgar R. Miller.

Dr. Lemuel C. McGee, Medical Director, Hercules Powder Company, was unable to attend and Dr. Dana D. Burch read a paper for Dr. McGee entitled "Medicine's Contribution to Industry." There was no discussion of this paper and the meeting was adjourned at 5:20 P. M.

At 6 P. M. a buffet supper was served to those present, as guests of the New Castle County Medical Society.

On Tuesday evening, October 12, 1943, at 8:30 P. M. the House of Delegates was called to order by President Jones. See Transactions below.

The Wednesday morning Session was called to order by President Jones at 9:30 A. M.

In the absence of Dr. LaMotte, Dr. W. Edwin Bird gave the report of the House of Delegates.

Dr. John H. Foulger, Director, Haskell Laboratory of Industrial Toxicology, E. I. duPont de Nemours and Company, presented a paper, with slides, on "The Value of Studies of the Circulation." Dr. Foulger's paper was discussed by Drs. W. Edwin Bird and Edgar R. Miller.

Dr. Edgar E. Evans, Director, Dye Works, Medical Department, E. I. duPont de Nemours and Company, presented a paper, with slides, on "The Effects of Industrial Gases Upon the Human Lungs." Dr. Evans' paper was discussed by Dr. John H. Foulger.

Dr. William Erb, Associate in Surgery, University of Pennsylvania, presented a paper, with slides, on "The Treatment of Varicose Veins." Dr. Erb's paper was discussed by Drs. Everett M. Aikman, W. Edwin Bird and Raymond A. Lynch.

Dr. Charles Levy, Acting Chief of Medicine, St. Francis and Wilmington General Hospitals, Wilmington, presented a paper on "Streptococcus Viridans Bacteremia." There was no discussion of Dr. Levy's paper.

At this time the election of the President for the year 1944 was held. Dr. Richard Beebe, of Lewes, was elected. Dr. Lawrence J. Jones, retiring president, introduced the new president and asked him to make a few remarks to the Society.

DR. RICHARD BEEBE: "I am not going to bore you with a speech, as I do not want to spoil anything that has been or will be said."

The meeting then adjourned at 12:30 P. M., and at 1 P. M. a buffet luncheon was served the members of the Society and the Women's Auxiliary, as guests of the Society.

The afternoon Session was called to order at 2 P. M. and Major Spencer Snedeker, U. S. Army, Director of Orthopedic Service, Valley Forge General Hospital, presented a paper, with slides, on "War Wounds of the Extremities." Major Snedeker's paper was discussed by Dr. John C. Pierson.

Colonel James B. Brown, U. S. Army, Director, Plastic Surgery Service, Valley Forge General Hospital, presented a paper, with slides, on "The Plastic Surgery of War Wounds." Col. Brown's paper was discussed by Dr. W. Edwin Bird.

Dr. Machteld E. Sano, Research Pathologist, Temple University, Philadelphia, presented a paper, with slides, on "A New Method of Skin Grafting." Dr. Sano's paper was discussed by Dr. I. J. MacCollum and Colonel Brown.

Dr. Charles W. Dunn, Chief, Department of Endocrinology, University of Pennsylvania Graduate School of Medicine, presented a paper, with slides, on "Gynecomastia." Dr. Dunn's paper was discussed by Dr. M. A. Tarumianz.

Dr. W. Wayne Babcock, Professor of Surgery, Temple University, Philadelphia, presented a paper, with slides, on "The Operative Treatment of Cancer of the Rectum." Dr. Babcock's paper was discussed by Drs. James G. Spackman and W. Edwin Bird.

The Annual Session of the Medical Society of Delaware was then adjourned at 5:20 P. M.

MEDICAL SOCIETY OF DELAWARE

Transactions: House of Delegates

October 12, 1943

The meeting of the House of Delegates, 154th Annual Session of the Medical Society of Delaware, was called to order by the President, Dr. L. J. Jones, at 8:30 P. M., on October 12, 1943, at the Delaware Academy of Medicine, Wilmington.

The following members were seated:

New Castle County: L. J. Jones, W. O. LaMotte, F. A. Hemsath, B. M. Allen, L. W. Anderson, W. E. Bird, E. M. Bohan, G. J. Boines, Ira Burns, J. J. Cassidy, I. L. Chipman, C. H. Davis, G. W. K. Forrest, W. W. Lattomus, C. C. Neese, A. J. Strikol, M. A. Tarumianz, N. W. Voss, C. E. Wagner.

Kent County: C. J. Prickett, Wm. Marshall, Jr.

Sussex County: Bruce Barnes.

Moved, seconded and carried that the minutes of the last Session be dispensed with, having been printed in *THE JOURNAL* (November, 1942).

Reports of Officers

Moved, seconded and carried that the report of the President be accepted as printed in *THE JOURNAL*.

Moved, seconded and carried that the report of the Secretary be accepted as printed.

Moved, seconded and carried that the report of the Treasurer be accepted as printed.

Moved, seconded and carried that the report of the Councilors be accepted as printed.

Reports of Standing Committees

Moved, seconded and carried that the report of the Committee on Scientific Work be accepted as printed.

Moved, seconded and carried that the report of the Committee on Public Policy and Legislation be accepted as printed.

Moved, seconded and carried that the report of the Committee on Publication be accepted as printed.

DR. M. A. TARUMIANZ (Wilmington): May I just say a word in regard to this report. I think it would be wise for the Society to appoint an accountant to audit the books of the Business Manager of *THE JOURNAL*. I have been the Business Manager for fourteen years. Not being on a salary I might be tempted to take a salary from that account. Since there might be a possibility of some discussion or argument, I move that the House of Delegates ask the President to select an auditor or accountant to audit the books of the Business Manager. I do not believe that we can, as laymen, audit books. I think we should pay whatever fee they require and have this done on an official basis. Then there would not be any argument or any temptation to accuse anyone in any way.

DR. WM. MARSHALL (Milford): Mr. President, I believe you will find that it is up to the Councilors to be the auditors.

SECRETARY LAMOTTE: No one has had the time to do this; they have just taken a few minutes to do it at the Annual Session. I think they should be looked over by an expert. All the books are subject to such audit as the House of Delegates should elect.

DR. TARUMIANZ: In connection with this, I would also suggest that all those who deal with funds of this Society should be bonded. I am dealing with thousands of dollars. I would not expect to pay this bond from my own pocket, therefore, the House of Delegates should order the Treasurer and the Business Manager of *THE JOURNAL* to be bonded, to the amount of five hundred dollars.

DR. F. A. HEMSATH (Wilmington): The Council shall decide the amount of bond for the Treasurer and other delegates.

PRESIDENT JONES: Upon this basis it would be obligatory.

Moved, seconded and carried that, the report of the Committee on Medical Education be accepted as printed.

Moved, seconded and carried that the report of the Committee on Necrology be accepted as printed. Dr. Chipman was asked to read the report.

DR. W. E. BIRD (Wilmington): Dr. Lewis B. Booker should not be in this report. He died before last year's session, and his name was included in last year's report.

Reports of Special Committees

Moved, seconded and carried that the report of the Advisory Committee, Women's Auxiliary, be accepted as printed.

Moved, seconded and carried that the report of the Committee on Cancer be accepted as printed.

Moved, seconded and carried that the report of the Committee on Syphilis be accepted as printed.

Moved, seconded and carried that the report of the Committee on Tuberculosis be accepted as printed.

Moved, seconded and carried that the report of the Committee on Maternal and Infant Mortality be accepted as printed.

Moved, seconded and carried that the report of the Committee on Mental Health be accepted as printed.

Moved, seconded and carried that the report of the Committee on Criminologic Institutes be accepted as printed.

DR. TARUMIANZ: Maybe I am getting too aggressive in this matter, but I have a recommendation here and if you do not mind, I will read it.

"Your Committee is of the opinion that the previous reports and recommendations of the Committee have been completely ignored. Thus the Society discourages the Committee's becoming serious in regard to its responsibility toward major problems with which the community is confronted.

The Committee suggests that the Society appoint a special committee to follow up all the resolutions passed by the Society at its Annual Session.

The Committee, in addition to the resolutions presented at the last Annual Session, wishes to impress upon the Society that the Society should seriously consider the appointment of a special committee to deal with post-war problems in conjunction with other state and city post-war organizations."

Today we are hearing of delinquency in our state from all sorts of organizations and laymen. This is not primarily sociologic and economic, it is certainly a medical problem, therefore, in 1942 I requested the Society to appoint a committee to operate with our Society and the educators and other organizations and find means by which we could overcome this serious community problem. This is a problem concerning the health of the children of our state. We also began to consider

the problem of the alcoholics and appointed a committee to cooperate with other organizations and approach the Legislature; nothing was done about this. Yet we are requested to again prepare a report at this Annual Session. These reports are accepted, approved, and filed.

If it isn't too much, I would like to ask the House of Delegates, are we just here to hear a report of a Committee, then file it, forget about it, and wait until we hear next year's report? I think we should have a special committee to follow-up these resolutions and the reports passed at these meetings. The Councilors ought to do something about it during the year. I would also like to mention at this time every organization is thinking and organizing itself for a post-war program. We all know that the war is going to end someday; are we prepared to assume our responsibility in the community or are we going to depend upon a static structure of our organization. I think, to protect ourselves and not to allow medicine to become socialized, we should have a committee on a post-war program. Every state has such a special lay committee. In this state Mr. Myerling is the chairman of that committee or state agency. We have in our State Council a special committee on post-war program. We haven't so far even attempted to think about the post-war program for the Medical Society and the medical profession. What role will we play? Could not we organize ourselves to prepare and achieve some level of success in our endeavors? I do not think anything is going to be static; the society of yesterday is dead, there is a new society coming into being and medicine is not going to be socialistic if we are on our feet. It is up to us to work on some solution and not wait around and think we are protected from all these new modern ideas.

I am very much in favor of the House of Delegates considering these two problems very seriously and not wait until next year. It would be too late then. We know definitely that the life of medicine doesn't exist as a thing apart; we are part of the whole.

I move that the House of Delegates consider two problems: first, a special committee to follow out all our resolutions and reports; second, a post-war Committee.

DR. HEMSATH: I think everything Dr. Tarumianz said is quite in order and very well taken, but I question the matter of procedure in acceptance of these committee reports. I call attention to the previous report of the Committee on Mental Health. Since nothing was done, it is useless to present further problems to be solved, therefore, the Committee reiterates the problems. It was recommended that the House of Delegates approve the report of that Committee. It was accepted and I take it that in the acceptance of that report the requests of that Chairman were followed. On the other hand, in the report of last year, the Committee's report was that their recommendations were completely ignored.

Gentlemen, I know the way this House of Delegates is run. I should think, if a committee wants a resolution passed the chairman should present that to the House of Delegates under new business and see that that resolution is followed up. I take it that the Society is quite willing to present these resolutions in a formal form. I think it is a matter of procedure and not carelessness.

DR. TARUMIANZ: I have been in this state long enough to know the working mechanism of any House of Delegates. In the past we read our re-

ports. Sometimes we do not read reports or resolutions. This is not a matter of a half hour or an hour. The committee must not be involved; it has to be from the membership of the House as a whole. Maybe that resolution is not an adequate resolution. Maybe the proposed committee would find entirely different methods of approach to that question. I do not consider that it is the duty of the Committee to present resolutions adequately prepared to be agreeable to the whole Society. I think we need a special committee to follow up these things. In the past we haven't. We have always passed very fine resolutions and very fine reports, but when the time comes for the legislature they are not followed through.

DR. A. J. STRIKOL (Wilmington): I think this is out of order. This should come under new business.

DR. TARUMIANZ: I am willing to hold this until new business.

The report of the Committee on Medical Economics was approved as printed.

Report of the Committee on Revision of the By-Laws.

DR. BIRD: You have all read the report asking that this Committee be given another year. The New Castle County Society instructed their delegation to vote to postpone. We have some new advices from the A. M. A. in this connection. We appealed to Dr. West to criticize our tentative draft. He turned the matter over to Mr. T. V. McDavitt, of the A. M. A.'s Bureau of Legal Medicine and Legislation. I got from him an entirely new set of By-Laws. What he offered Delaware was substantially what was adopted in 1940 in the state of Washington, and in Rhode Island in 1943. The A. M. A. now realizes that it is one of their functions to assist the state and county societies in the preparation of modern, comprehensive By-Laws.

The new By-Laws are new in concept and arrangement. We will have to make certain changes in our membership clauses. After all our preparations, we still ask for another year's time, at least.

The report of the Committee on Publication was then accepted as printed.

Moved, seconded and carried that the report of the Delegate to the American Medical Association be accepted as printed.

Moved, seconded and carried that the report of the Representative to the Delaware Academy of Medicine be accepted as printed.

The report of the Nominating Committee was accepted as printed.

New Business

DR. TARUMIANZ: I move that the House of Delegates authorize the President to appoint a special committee of at least five well qualified members of the Society to follow out all the Resolutions and Reports of committees during the ensuing year.

DR. B. M. ALLEN (Wilmington): What are they supposed to do after they follow it up?

DR. TARUMIANZ: Follow it up! Any letters to be written to the Bar Association or other letters; go ahead and proceed with them.

DR. C. J. PRICKETT (Smyrna): Suppose this committee would not necessarily approve of the report, what would be the procedure in that case?

DR. TARUMIANZ: If the committee does not approve then it does not carry the weight of the Medical Society. This is a free country; anybody can present a bill to the Legislature. This committee will follow out during the year whatever recommendation this House has approved.

DR. ALLEN: I would think that would come

under the Committee of Public Policy and Legislation. Why do they not follow this up; why have an extra committee?

PRESIDENT JONES: I do not think that anything is needed to prod the Legislative Committee. They have done a great deal of good work.

DR. TARUMIANZ: This is simply to assist the Legislative Committee to prepare matters pertaining to our resolutions, and help them carry on the work. There are some resolutions that have nothing to do with the Legislative Committee.

DR. I. L. CHIPMAN (Wilmington): What do we have a Secretary for?

DR. L. W. ANDERSON (Wilmington): Dr. Tarumianz's suggestions remind me of what goes on in Washington. Seems to me like this is a committee to carry on when the other committee breaks down, a circle within a circle.

DR. TARUMIANZ: I would not allow anyone to accuse me of bureaucracy and I won't accept that, Dr. Anderson, from you or anyone else. I am very far from a bureaucrat. Unless we look upon this matter from a sense of self-preservation someone else is going to do the work that we do not want to do.

SECRETARY LAMOTTE: There is one Bill here that requires more work than any one Secretary can do. It takes all the effort we have, combined.

DR. CHIPMAN: We have a Secretary, a President and three Councilors; that is their work.

DR. C. C. NEESE (Wilmington): I think Dr. Tarumianz is perfectly right and that it is perfectly right if we had a paid Secretary who could devote his time entirely to the profession. It would be well within his duties to see that the proper information was disseminated in the proper channels. Under the circumstances, just as Dr. Tarumianz says, many things are brought up in a state meeting, a resolution is passed, and there just isn't anything done about it. A couple of years ago I bought a new automobile. I went in to a certain shop to have some work done and some little shrimp came over to me: "What's your trouble, doctor?" He made out a sheet and carried it around with him for a while, then he disappeared. I stood around and after a while some other fellow came up to me and said: "Is there something you wanted?" I told him someone else had apparently gone to take care of it but that I had been waiting quite a while. That is the same thing that happens with a lot of good stuff that is put in the files. We have it fresh in our minds for something to be done about it, but nothing is done. Another point is this, if we do not do it, as Dr. Tarumianz says, there are many people who are ready to do it for you and get a hook in the management of the medical profession. This Wagner Bill that is to come up at this session of Congress is a sample. If you haven't read it get a copy and read it; it has really got the stuff.

DR. C. H. DAVIS (Wilmington): It seems to me this resolves itself into the fact whether the present committee is capable. I think there is some question as to whether a special committee would have the authority in carrying these recommendations out. If the officers of the Society were to take over the responsibility of the Society's resolutions, Dr. Tarumianz doesn't care who does it as long as someone does it. This could be made a special job with the officers of the Society and the present Committee. It may not help matters by appointing a special committee. Officers, by right of position, would have authority which no committee would have the right to carry out.

DR. TARUMIANZ: Dr. Davis' argument is a very splendid one. If we can induce the committee whose responsibility it is to follow-up, there would not be any necessity for a special committee. The question is: can they do it physically? It is immaterial to me. I only want the House of Delegates to assume an entirely different attitude and be a little more aggressive about these recommendations that are made.

DR. A. J. STRIKOL (Wilmington): The only way I can see is that the Society have a paid Secretary. Employ a Secretary to correspond and carry on; that is what most of the large state societies are doing. We may have hundreds of committees but if they do not have enough time, nothing is done. We have the funds. I think we should empower the Secretary and finance him so he can carry out these resolutions.

PRESIDENT JONES: During the past year Dr. Munson took over as Secretary and then went in the Army. Sometime ago Dr. LaMotte very kindly agreed to do this work. He not only did that, but also took over Dr. Heck's job as Treasurer. If there is no more discussion, I think we should proceed to vote.

DR. TARUMIANZ: I will withdraw my resolutions. Unless it is the unanimous opinion of the House of Delegates, I do not want to present my motion. If we cannot accomplish what we are after, what is our next best method? Being a practical man, I would like to know something about the practical way of handling this situation. I believe our organization is big enough to pay for such a Secretary.

DR. HEMSATH: I think that the motion which was made and then withdrawn would perhaps have been out of order, because it would require an amendment to the Constitution. The President is the head of the Society during the year, and I think every committee can call upon him and get his support, and I think you will find in him a coordinator who will stand with and understand the committee. If any of our standing committees would like to have special authority to coordinate with other organizations during the year, I think now is the time.

DR. DAVIS: I move that it be the consensus of the House of Delegates that the President be requested to assume responsibility for the carrying out of the recommendations by seeing that they are properly brought to the attention of the special committees and others, as it be necessary.

DR. G. W. K. FORREST (Wilmington): Some years ago I was Secretary of this State Society, for possibly ten years. Dr. LaMotte succeeded me for sixteen years. Dr. LaMotte will bear me out in this statement—the Secretary does the work, and in the past it has been awfully hard to get any cooperation from the President. The President is usually elected because of his standing in the state and he is too busy; he is really a figurehead. I think, unless the new President is different from the ones that have been in the past he is not going to be a very good coordinator.

DR. TARUMIANZ: Would it be too much if I made a motion that the House of Delegates, since it approves recommendations of special committees, authorize this Committee to proceed with its work toward the attainment of that objective?

DR. BIRD: I have been listening very interestedly. Last year this Committee brought in a report involving four recommendations. The recommendations were duly and officially approved. That Committee is in office until December 31st, then re-appointed. I consider that it is the duty of the Committee to carry out their

recommendations, once they are approved, as far as the Committee can. Unfortunately, many of the recommendations involve legislation, in which case the Committee recommending and the Committee on Public Policy and Legislation both take the matter in hand, and it is up to the Legislation Committee to see that it is carried into the Legislature. The By-Laws definitely state that term of office is from January 1st to January 1st of the following year. We should not turn these recommendations over to a committee that may not be sympathetic at all; although, sympathetic or not, the adoption of any resolution or report by this House is a mandate to any and all committees to carry out the will of our Society as expressed by its legislative body.

DR. N. W. VOSS (Wilmington): I am glad that the Society is becoming modern. We need an agitator; we need a machine to push things along. I just want to say that I am in favor of Dr. Tarumianz's idea, especially this post-war idea of doing something. We have to get in line with this modern world.

DR. TARUMIANZ: This Post-War Committee, I am very serious about this. I urge the House of Delegates to consider this very seriously. We should have a post-war program. We should have a committee of well-versed, mature minds and we should have time to study, to coordinate our work with the work of all other business organizations. We should consider ourselves part of the whole. I still maintain that if anyone has an idea that we are in a static situation they are just dreaming. Please do something about this matter. I know that I attend a State Council of some thirty-five members. We have created a Committee for a post-war program which takes in all phases of post-war education. I think all these are more or less connected with our Medical Society; we should be in it. I move that the President be authorized to appoint a committee of at least seven members, representing all three counties, to be known as a **Post-War Program Committee**, a permanent committee, until the war ends, and afterwards if necessary. This will be to study the Society's problems, and program of the Society as a whole, and try to coordinate its efforts with the state and national organizations who are considering post-war problems.

DR. HEMSATH: Could we combine this Committee with the Committee Medical Service and Public Relations of the A. M. A., since the consideration of post-war problems is one of the problems of the Medical Service Committee of the A. M. A.? I wonder if, rather than have two committees planning for the future, it could not all be taken care of by one committee?

DR. TARUMIANZ: I would amend only in this way. That the members of the Council of this Society would automatically become members of this committee, but I think it should be a separate post-war committee.

DR. CHIPMAN: What do you mean we shall do if we go away from the A. M. A.?

DR. WM. MARSHALL: I had a letter just this last week from one of our men in the service. He is a regimental surgeon connected with the purely medical things of sanitation and hygiene. He seems to be very much worried about what will happen to him when he gets back; what kind of an education the profession is preparing to give him when he returns from the country's service. Not everyone in the Army is connected with the big hospitals, or field hospitals, where they are attached to medical classes. He feels, being a few months away from his work, that he will

need a refreshing of his medical knowledge. I feel in this set-up Dr. Tarumianz is getting ready for post-war work, we should have post-graduate work, at least for our own members who are situated in the position this doctor is in.

PRESIDENT JONES: Should I appoint this committee or should the incoming president appoint the committee?

DR. TARUMIANZ: I think it should be appointed by you. The three Councilors and the President and Secretary become automatically members of that committee, plus two other members.

DR. DAVIS: I think Dr. Tarumianz should make some recommendation for secretarial service for that committee. Because, if they are going to carry out any particular work they are going to have to do a great deal of work, and should have some provision for secretarial assistance. If Dr. LaMotte isn't provided with some of the funds, would it be possible to make a motion to enable the officers of the Society to spend up to \$500, or whatever you think is necessary, for secretarial work for the Secretary and this Special Committee?

Mr. President, I move that the Secretary be authorized to obtain the services of a secretary or Stenographer for the purpose of taking care of this work, and that the amount should not exceed \$500 per year.

This motion was carried.

DR. HEMSATH: I move that the newly appointed Treasurer, Dr. W. W. Lattomus, take over immediately. Motion carried.

SECRETARY LAMOTTE: Does the House of Delegates want to take any action concerning this Wagner Act? I have a Resolution here, if it is approved by the members. This Resolution was read; motion made and carried that the Resolution be adopted.

DR. HEMSATH: We have a Council and they do not meet very often. Article 9, Section I says that all resolutions appropriating funds must be referred to the Finance Committee. I think the President should call a meeting of the Council one of these days.

DR. NEESE: I think we should have a motion to take care of the expenditures for the Society at this Annual Session. I move that the funds be appropriated to take care of the expenses of this session of the Society.

DR. BRUCE BARNES (Seaford): I would like to invite the Society to meet in Sussex County next year, and if it would not be out of order, I would like to have an expression of opinion as to what would be the most suitable time. Our regular date is rather late for a meeting at Rehoboth.

DR. TARUMIANZ: Mr. President, since Seaford has become the metropolis of Sussex County, I think it would be very appropriate for our Society to meet in Seaford.

PRESIDENT JONES: I feel that it is entirely up to the Sussex County Medical Society to use their own pleasure in the matter. You have so very kindly invited us down there, we will go any place you in Sussex select. As President of the Society, I accept your invitation and suggest that you of Sussex County select both the time and the place.

DR. DAVIS: With regard to the Murray-Wagner Bill, I have started sending out these little reprints with my statements. I think they will go out month after month while this Bill is before Congress. It is the only way I know of that we can get it to the patients. I tried to get permis-

sion to put them at the Rotary Club, but it came outside the jurisdiction of things that could be permitted.

PRESIDENT JONES: I might repeat Dr. Barnes' invitation. The Annual Session of the State Medical Society is invited to Sussex County next year.

There being no further business before the House of Delegates, motion to adjourn is in order.

Motion made and duly seconded to adjourn.

The House then adjourned at 11:30 P. M.

DELAWARE ACADEMY OF MEDICINE

The third of a series of meetings open to the public was held by the Delaware Academy of Medicine on November 15, 1943. Dr. Edgar R. Miller, Vice-president of the Academy, was chairman of the session.

A brief history of the development and the use of the x-ray in medicine was given by Dr. W. W. Lattomus. Dr. George Boines presented the story of the rather accidental discovery of penicillin by Dr. Alexander Fleming, an English bacteriologist. He discussed the present difficulties in the large-scale preparation of penicillin, and the progress which is being made under the auspices of the various American manufacturing drug-gists and the Federal government. It was pointed out that our knowledge is as yet incomplete on the action of this interesting therapeutic agent. While its effect in certain infections is remarkably good it was emphasized that there are numerous species of bacteria for which penicillin has no destructive action.

Dr. James C. Kakavas, Associate in Bacteriology, University of Delaware, concluded the program by describing the use of penicillin in veterinary medicine. An interesting part of Dr. Kakavas' contribution to the program, as a guest of the Academy of Medicine, was the demonstration of the broth cultures of *penicillium notatum*. The exhibit included Petri dishes illustrating the method of measuring the strength of penicillin against bacterial cultures.

The lay guests of the Academy showed considerable interest in the presentation arranged for their benefit. Questions were received from the floor, and the informal discussions continued after the formal presentations were concluded.

The Delaware Academy of Medicine, in this series of public meetings, hopes to serve as a channel through which the public may obtain information concerning developments in the medical field. In this function the Academy is utilizing the experience of the Academies of Medicine in other states. It is hoped that this liaison with the friends of American medicine will lead to a better general understanding of the role of medicine and the place of the physician and the dentist in our civilization. A fourth such meeting is planned for an, as yet, undetermined date in January.

The Editor's Job

Getting out this paper is no picnic.

If we print jokes, people say we are silly.

If we don't they say we are too serious.

If we clip things from other magazines

We are too lazy to write them ourselves.

If we don't, we are stuck on our own stuff.

If we don't print every word of all contributions

We don't appreciate true genius.

If we do print them, the columns are filled with junk.

If we make a change in the other fellow's write-up, we are too critical.

If we don't, we are blamed for poor editing.

Now, like as not, some guy will say

We swiped this from some other sheet.

WE DID.

In spite of wartime difficulties the Ministry of Health (British) has decided to intensify the offensive against tuberculosis. The new campaign has been summarized as one which will no longer require medical science to wait for tuberculous cases to come to it, but will enable it to go out and look for them. It is true that there were 25,000 deaths from tuberculosis in 1942, as compared with 28,000 in 1941 but this encouraging sign has not induced any complacency in the Ministry of Health. Even in wartime the nation cannot afford to ignore an enemy which kills 25,000 people a year. Ed., *Jour., Roy. Inst. P. H. & Hyg.*, June, 1943.

Editorial

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THE CHICAGO CONFERENCE

Annual Conference of Secretaries and Editors of Constituent State Medical Associations was held in the American Medical Association Building, Chicago, on November 19th and 20th. The program was as follows:

Call to Order. Roger I. Lee, Chairman of the Board of Trustees of the American Medical Association.

Address. James E. Paullin, President of the American Medical Association.

Problems Relating to Assignment of Duties of Military Surgeons. George F. Lull, Deputy Surgeon General, United States Army.

Hospital Training of Medical Graduates. Victor Johnson, Secretary, Council on Medical Education and Hospitals of the American Medical Association.

Address. Herman L. Kretschmer, President-Elect of the American Medical Association.

Cooperative Relationship of Procurement and Assignment Service and State Medical Associations. Harold S. Diehl, Member, Directing Board, Procurement and Assignment Service for Physicians, Dentists and Veterinarians.

The War Participation Committee as a Coordinating Agency. Walter F. Donaldson, Chairman,

War Participation Committee of the American Medical Association.

The Work of the Council on Medicine Service and Public Relations. Louis H. Bauer, Chairman, Council on Medical Service and Public Relations of the American Medical Association.

Dinner Meeting of Editors of State Medical Journals.

Wingate M. Johnson, Editor of the North Carolina Medical Journal, Presiding.

The Council on Pharmacy and Chemistry. Austin E. Smith, Secretary, Council on Pharmacy and Chemistry of the American Medical Association.

The Cooperative Medical Advertising Bureau. Open Discussion.

Medical Legislation in Congress. J. W. Holloway Jr., Director, Bureau of Legal Medicine and Legislation of the American Medical Association.

Obstetric and Pediatric Care for the Wives and Children of Service Men. L. Fernald Foster, Secretary of the Michigan State Medical Society.

The Conference was presided over by John S. Bowslog, secretary of the Colorado State Medical Society, who steered this rather full program to its conclusion on time.

Much that was said was "off the record" and intended for the immediate audience only, but the major part will be published in the Organization Section of the *Journal of the American Medical Association*, and our members will do well to read these informative articles. Those portions that have special significance for the Delaware profession will also appear in this JOURNAL.

These Conferences, year by year, are assuming an increasing importance; in fact many believe that, next to their House of Delegates, they are the most important meetings held by the A. M. A. Certain it is each state secretary and editor gets a national purview of many pressing medico-legal, economic, and organizational problems, and other valuable information, much of it "inside stuff," for the guidance of their state associations and journals. There is never any semblance of "pressure" or "politics" by the Home Office personnel, who are sometimes referred to in various quarters as a dictatorial oligarchy; in fact the program is arranged purely as an informational one, the participants of which are overwhelmingly men not in the Home Office. It is informa-

tion that we go to get, and it is information that we do get.

With this issue the Editor has been "on the job" for twenty-eight years, not by several years a record-breaker among the state journals but withal a fairly comprehensive apprenticeship. By far most of this experience has been pleasant, but there have also been some headaches, which is as it should be—it takes the rain to make us appreciate the sunshine. We are now getting our second war experience, with restrictions and difficulties that surpass the first one. May the end of this come soon; this is one kind of experience we can well do without. What things have happened to American medicine and American medical men within the past year! May we never see their like again.

Soon we shall greet a New Year, and may it be the year that greets a new peace.

THE JOURNAL sincerely wishes all its readers and friends a Christmas as merry as wars will permit, and a New Year happy in the prospects for peace.

HISTORICAL NOTE: M. S. OF D.

The Medical Society of Delaware was incorporated on February 3, 1789, by a special Act of the General Assembly. Hitherto we have not come across valid evidence of a medical society in Delaware prior to this incorporating, though one would naturally expect that there was such a society in existence for a time and that later they decided to incorporate. During our recent visit to Chicago we unearthed the evidence we had been looking for, through the courtesy and assistance of Dr. Olin West, secretary of the A. M. A., and his staff.

In the *Transactions of the American Medical Association* for 1873 (Volume 24, page 292) appears an article and table written by J. M. Toner, M. D., at that time associated with the U. S. Bureau of Education, which records that the Delaware State Medical Society was found in 1776, and gives the following data: meets annually; qualifications, medical degree; authorized to grant medical licenses; active members, 30; honorary members, 70; publishes transactions, as a pamph-

let; President, Dr. R. G. Ellegood; Recording Secretary, Dr. David Hall, of Lewes.

In the *Transactions of the American Medical Association* for 1879 (Volume 30, page 321) is an article by Stanford E. Chaille, M. D., of New Orleans, which gives certain data on the national and state societies for the year 1878, as follows: meets, second Tuesday in June; members, 95; present at meeting, 20; doctors in state, 170; dues, one dollar per year; balance on hand, \$40.00; Secretary, Dr. G. T. Maxwell, editor, *Wilmington Morning News*. It also states that the State Board of Medical Examiners was established in 1822, thus supplementing the licensing power originally granted to or assumed by the Society of 1776. Specific delegation of this power was given to the Society by the Legislature in 1819, in the first Medical Practice Act, which was replaced by the Act of 1822.

Since Dr. Toner was a very eminent physician of his day, and had access as a government official to records, memoirs, etc., that perhaps have long since passed into the great beyond, we are of the opinion that his data are as accurate as any now extant, and thus we accept his date, 1776, as that of the founding of the Medical Society of Delaware. He lists its title as the "Delaware State Medical Society," which means that it must have been founded after July of that year, as it was only after that date that Delaware considered herself a state. The Act of Incorporation of 1789 makes the legal title "The Medical Society of Delaware."

Of the state societies in this country Toner's table lists the following up to the turn of the century:

New Jersey	—	1766	Founded and Incorporated
Delaware	—	1776	Founded; Incorporated 1789
Massachusetts	—	1781	Founded
New Hampshire	—	1791	Founded
Connecticut	—	1792	Founded
Maryland	—	1799	Founded
[Garrison says Maryland organized in 1789 and incorporated in 1799.]			

Thus, instead of being the third oldest state medical society and the second oldest medical corporation in the United States, the Medical Society of Delaware is the second oldest society and the second oldest corporation. Hoary with its 167 years, it is efficiently serving the people of the First State.

W. E. B.

POLITICAL LINIMENT

—Colloquy on the Lyrical Possibilities of a Certain Pending Bill—

"Ye're singin'," said Mr. Hennessey.

"That I am," said Mr. Dooley.

"An' what's 't ye're singin'?" said Mr. Hennessey.

"Ye wouldn't know," said Mr. Dooley, "so I'll tell ye. 'Tis th' new Gilbert an' Sullivan; th' up-to-date lyrie av a ditty from th' 'Pirates av Finance.'"

"Th' bankers er th' loan sharks?" said Mr. Hennessey.

"Nayther wan," said Mr. Dooley. "Th' politishuns. Have ye not read th' Wagner-Dingell bill?"

"I have not," said Mr. Hennessey.

"Ye should," said Mr. Dooley. "'Twill put th' gover'ment in midicine. Ye'll report yer bellyache t' Washington, W. N."

"W. N.?" said Mr. Hennessey.

"Wet Nurse," said Mr. Dooley. "Th' cradle t' th' grave. Th' pain killer, so ye won't feel 't whin they take yer eye teeth."

"Do tell," said Mr. Hennessey. "Bnt th' Prisdint ain't no doctor."

"Ain't he?" said Mr. Dooley.

"Naw," said Mr. Hennessey. "He's got thim surgeon gineral's."

"Just wan," said Mr. Dooley. "I was singin' av 'im."

"Sing 't again," said Mr. Hennessey.

"I will not," said Mr. Dooley. "Ye haven't th' ear for music, so I'll tell it to ye: 'I am th' very model av th' modern surgeon gineral; th' boss av all yer ailments from th' mintal t' th' vineral . . .'"

"That ain't th' word," said Mr. Hennessey.

"What ain't?" said Mr. Dooley.

"That vineral," said Mr. Hennessey.

"'Tain't th' way I heerd 't, th' time I wint. . . ."

"Niver mind," said Mr. Dooley. "Ye mean vinereal, wit'out th' details. But they're changin' 't. 'Twill have th' number."

"I know," said Mr. Hennessey. "606."

"'Twill also have th' grade," said Mr. Dooley. "No more av thim perscriptions. Here's how they'll work 't. Ye go t' th' doctor. . . ."

"Which doctor?" said Mr. Hennessey.

"Th' wan they tell ye," said Mr. Dooley. "Ye'll be instructed be th' local office av th' surgeon gineral. Ye'll go t' th' schoolhouse, like fer yer rations, an' th' card they give ye'll say t' see Dr. O'Toole on Monday an' Windsay from three t' foive, unliiss 'tis rainin', er unliiss 'tis th' holiday er th' day after, in which case ye'll see 'im th' Friday followin' th' fifteenth av th' nixt an' ensuin' calendar month if 't ain't February or they ain't no ball game."

"He'll be t' th' ball game?" said Mr. Hennessey.

"He will not," said Mr. Dooley, "but ye will. Supposin', however, ye find 'im. At three be th' clock ye inter th' first door an' git in th' line fer th' second, an' at six minutes t' foive ye're 't th' head av th' line. At wan minute t' foive th' man befure ye comes out, an' ye start fer th' second floor. But ye don't make 't. Th' lady tells ye 'tis after th' hours, an' ye should come back av a Chuesday wit' th' piece av paper she gives ye filled out. So ye fill 't out."

"There?" said Mr. Hennessey.

"Naw," said Mr. Dooley. "Ye take 't home, rememberin' how th' lady sez t' read th' same wit' care. Th' first thing ye read is the pinalty."

"Th' what?" said Mr. Hennessey.

"Th' pinalty," said Mr. Dooley. "Th' part where ye'll go t' jail—foive years for each time ye lie."

"Naw," said Mr. Hennessey.

"Yis," said Mr. Dooley. "Dependin' on how ye answer th' Quistion Tin."

"What's that?" said Mr. Hennessey.

"How will ye vote at th' next Prisdintial iliction?" said Mr. Dooley.

"Be that th' Quistion Tin?" said Mr. Hennessey.

"'Tis so," said Mr. Dooley.

"How'll they know which av 'em I vote fer?" said Mr. Hennessey. "'Tis none of their business."

"Ye'll discover th' same later on," said Mr. Dooley. "Meanwhile ye deliver th' paper, an' th' lady sez t' come back av a Chuesday an' she tell ye whin ye should come agin."

"Does she tell me?" said Mr. Hennessey.

" 'T depinds," said Mr. Dooley. "How did ye answer th' Quistion Tin? Did ye say ye'd vote for th' Dimierats. Supposin' ye did. Thin they'll be sendin' fer ye: 'Come right in, Mr. Hinnissey. Stick out th' tongue, Mr. Hinnissey. Take off th' coat, Mr. Hinnissey. Wher's 't hurt, Mr. Hinnissey? Ye're suffering from th' number twenty-sivin, grade K, Mr. Hinnissey. Ask th' druggist fer th' number two; 'twill dissolve in yer likker, an' ye'll be well in th' mornin'. Good-bye, Mr. Hinnissey. See ye at th' polls.'"

"My, my," said Mr. Hennessey.

"But if ye told 'em ye'd vote Republican," said Mr. Dooley, "ye don't hear nawthin' till th' day before iliction."

"Supposin' I git sick in th' meantime," said Mr. Hennessey.

"Ye shouldn't," said Mr. Dooley.

"But supposin', anyhow," said Mr. Hennessey.

"In th' evint av sickness," said Mr. Dooley, "ye call up th' doctor, an' th' lady sez t' ye 'Who's callin' 'im, he ain't in.' So ye tel er 'tis Hinnissey callin,' an' she sez, sez she, 'Oh, oh, 'tis you.' 'Th' same,' you reply. 'Hold th' line,' sez she. 'I'm holdin',' ye reply. An' ye keep on holdin' till they look ye up. Y'see, Hinnissey, whin ye give 'em th' paper, th' doctor read 't over, an' whin he come t' th' place fer th' diagnosis av yer sickness he wrote in t' 'See Quistion Tin.' So th' lady sez, 'Ye'll have t' suffer,' sez she. 'Th' tronble wit' ye,' sez she, 'ye're Republican, an' they ain't no cure. Ye should tell th' druggist ye want th' number twinty.' 'What's th' number twinty?' ye ask. 'Tis th' eastor oil,' sez she 'goodbye.'"

"But what if I don't get sick?" said Mr. Hennessey.

"Ye'll be th' same, all right, all right," said Mr. Dooley. "'Tis th' purpose t' make ye so. Th' day before th' iliction th' doctor calls on ye at yer home. 'Stick out yer tongue,' sez he. 'Take off yer shirt,' sez he. 'H'm'm'm!' sez he. 'Ye've th' number twelve, grade A,' sez he. 'An' th' number sivinteen, grade B,' sez he. 'What's thim?' sez ye. 'Th' measles an' th' smallpox,' sez he. 'an' ye're quarantined from now till after they count th' votes,' sez he. An', Hinnis-

sey, I'm tellin' ye, if they's any Republican ballots t' be counted, somebody's th' liar. They'll ketch 'im, howiver, before th' inauguration."

"That's how they tell?" said Mr. Hennessey.

"That's how," said Mr. Dooley.

"'Tis a foine scheme," said Mr. Hennessey.

"They call 't th' social security," said Mr. Dooley. "In th' days av thim Roman imperos they called 't th' bread an' circuses. Thim things won't work no more; ye're tired av th' bread wit'out th' mate an' th' butter, an' they ain't nawthin' funny about thim clowns which is foightin' th' war wit' th' seat av their pants, so ye're sore about 't, an' they're givin' ye th' rub-off wit' th' liniment."

"Free?" said Mr. Hennessey.

"Fer six per cint av yer wages," said Mr. Dooley. "'Tis mentioned in th' song. 'Th' linimint fer six per cint. . . .'"

"What song?" said Mr. Hennessey.

"Th' wan I was singin'," said Mr. Dooley.

"I c'n think av a ditty av me own," said Mr. Hennessey. "'Dingell bills, Dingell bills, Dingell all th' day; remove yer ills wit' gover'ment pills fer six per cint av pay. . . .'"

"Sounds like Christmas," said Mr. Dooley.

"'Tis th' only Santy Claus left," said Mr. Hennessey.

"They's another song," said Mr. Dooley. "'Dingell bills, Dingell bills; big chief sits in his teepee promisin' security; Dingell bills, Dingell bills; procreation t' cremation; Dingell bills.'"

"Sounds like Tammany," said Mr. Hennessey.

"Th' same fer th' Sinator from New York," said Mr. Dooley.

With due apologies to the memory of Finley Peter Dunne, *Indust. Med.*, November, 1943.

Of the tuberculosis found among men examined at the U. S. Induction Center in Massachusetts, 10% were far advanced, 25% were moderately advanced and 65% early cases. This exactly reverses the usual percentages among cases admitted to sanatoria of whom 65% are far advanced, 25% moderately advanced, 10% early. David Zachs, M. D., Mass. Tb. League News Bull., April, 1943.

PEOPLE ARE SMARTER THAN ANYBODY

"We physicians take great pride in the fact that we have the healthiest people who have ever lived on this earth. We would therefore remind those visionaries who are determined to institute some compulsory scheme under national control for passing out pills and potions to the citizens at the taxpayers' expense that we now have less sickness and live longer than any other people ever have done.

"We physicians are not interested in any revolution in medical practice. We are, however, concerned with the improvement of the health of our American people. Good as it is, we would like to make it much better. We are convinced that compulsory sickness insurance certainly will never increase the real health of the people, but that it will certainly increase the total medical bill for the nation. It may distribute it a little more evenly, but it can never reduce it.

"Better health will only come by more complete immunization of the public, better hygiene for each individual, and better nutrition for all. It is characteristic of the human mind to want a drug to cure its disease and save it from the penalties of its own violations of the laws of life, just as it looks always for a prayer or a penance that will save it from the sins of its own soul.

"Man has returned to science, which has extended its promises of salvation—salvation by means of water closets, bathtubs, automobiles, neosalvarsan, sulfa drugs, anti-toxins, and vaccines. Now, man is turning to science's stepchild, economics, which describes a kingdom of heaven filled with garages for two cars, instead of one, an ever-normal granary, a quart of milk for every child, a 'free doctor' at everyone's beck and call 24 hours of the day. . . .

"As the upward trend of prices gains mo-

mentum, the squeeze on the middle income classes grows. White-collar workers are caught between higher taxes* on one side and higher living costs on the other. Because they lack political power as a group they get little or no attention. Politicians listen instead to the demands of pressure bloes purporting to represent the farmer and the workingman. So the chain-store manager, the preacher, the schoolteacher, the bank clerk, and the younger college instructors are becoming medically indigent. It is a new group of people, but the same old problem. . . .

"It is true that nearly two-thirds of our people are lacking more or less in proper foods, either through ignorance or poverty, *but when three-fourths of the automobiles in America in 1940 were driven by people earning less than \$20 per week I personally am convinced that our immediate problem is the development of a proper sense of values.*

"The decision for most of our people is to choose between automobiles, movies, beer checks, store teeth, chronic ill health, unpaid doctor bills, or sunshine and good food with their attendant good health. . . .

"I have complete confidence in the American people. As Louis Bromfield insists time and again, 'people are smarter than anybody.' The American citizen will not be fooled for long. Whenever he realizes that he has made a mistake with some social experiment, he is willing to repeal it. He is not afraid of names or slogans. He is pragmatic. His one test is, 'Will it work for me?' So we have the finest example of socialism in the United States Postal System, the most smoothly operating Soviet in our school system with its Boards of Education. So the American has always been willing to try anything and ready to discard it if he finds he has made a mistake. In recent years, however, he has lost some of his curiosity, some of his daring. As we have become more and more industrialized we have lost the security that goes with living on a piece of land that we can call our own and upon which, if worst comes to worst, we can raise our own food. *So there has been an increasing demand for 'security.' This has been aggravated by recent arrivals*

* EDITOR'S NOTE—Senate Bill 1161 proposes that not only "white-collar workers" but all *employed persons* have six per cent deducted from each pay envelope or check; all self-employed persons, seven per cent. Use of pencil and paper will quickly disclose the yearly "take" from 100,000,000 people then add to that another six per cent to be taken from the employer. It totals \$12,000,000,000. To employ 100,000 physicians, full-time, at \$7500 per year would only require \$75,000,000—a puny proportion (2½ per cent) of the \$3,000,000,000 the bill proposes for its medical and hospital service feature.

from Europe. It is actually against the tradition of our own pioneers to look to the state for succor in time of stress. . . .

"The bold knights of the whirligig who have led our nation for the last decade have been intent upon destroying the profit motive in making us all slaves of the state. It is but natural that the sucker-bait for this so-called reform should be 'Social Security.' Mind you, whatever you or I may think of this 'protecting' hand of the state, it has come to stay for a good many years. Social Security is here. *The only demand that we can now make is that Social Security work*, that it provide for our people actual security from the major catastrophes of life at a cost which they can afford. To the city dweller working at a machine these catastrophes are unemployment, old age, and sickness. We now have as a part of our Social Security program old age and unemployment insurance. Of course it does not provide much for unemployment, a few dollars a week for a few weeks. Even at that, how it will stand the strain of post-inflation depression is an open question. If we accept in principle, however, the compulsory insurance plan, as a protection against old age unemployment, we have few arguments to offer against insurance of the same sort to protect against the cost of illness and the loss of wages. *There is always, of course, the actuarial question as to whether we can afford it.* Social Security, however, is actually a tripod, two legs of which have been erected, and the third is coming, even if it wrecks the whole scheme. . . ."

EDITOR'S NOTE: The above quotations are from the Cincinnati Journal of Medicine via The New York State Journal of Medicine.

Its observations and comments were originally, and are here, intended to help each reader—be he or she a medical or a non-medical person—to become informed on this portentous question which has been decided and depressed as follows by Rear Admiral Ross T. McIntire, Surgeon General of the United States Navy, who adorns his present high position of national responsibility and is honored in medical circles:

"It is my hope that we shall never see medicine subsidized by the Government. . . . I hope that the time never comes when the practice of medicine, or anything that has to

do with it, has to come under government control. *It would be a disaster to this country; it would be a disaster to medicine. . . ."*

A similar decision should be made promptly by the constituents of each member of the U. S. Congress.

In England a similar scheme—the Beveridge Plan—recently before the House of Commons has been postponed until after the war. *Why postponed? In deference to the citizenship rights of the Englishmen now in military service.*

DOCTOR! You and your patients and their families and friends are responsible for what happens socially and politically in these United States while 9,000,000 of our younger men are fighting and dying for what they recently left behind.—A NON-EUROPEANIZED AMERICA.

WILL YOU AND OTHER CITIZENS LET IT BE CHANGED DURING THEIR ABSENCE?

Phila. Med., December 4, 1943.

MISCELLANEOUS

Directory of Medical Specialists

Announcement is made that the Directory of Medical Specialists is now to be published by the A. N. Marquis Company of Chicago, publishers of "Who's Who in America." Previous editions have been published for the Advisory Board for Medical Specialists by the Columbia University Press of New York City.

It is planned not to issue the next edition before 1945, on account of the war, but the A. N. Marquis Company will publish a supplemental list of all those who have been certified by the American Boards since the last (1942) edition of the Directory, totaling about 3600. This is to be distributed at cost, and monthly or bimonthly bulletins listing successful candidates for certification at examinations during the additional interim before the next edition, are to be issued as a subscribers' service.

Dr. Paul Titus (Pittsburgh) of the American Board of Obstetrics and Gynecology will continue as the Directing Editor, and Dr. J. Stuart Rodman (Philadelphia) of the American Board of Surgery continues as Associate Editor. The Editorial Board will be com-

posed, as before, of the Secretaries of the fifteen American Boards.

Communications should be addressed to the Directing Editor, Directory of Medical Specialists, 919 No. Michigan Ave., Chicago (11), Illinois.

SCIENTIFIC EXHIBIT, A. M. A.

The Scientific Exhibit at the Chicago Session of the American Medical Association, June 12 to 16, 1944, will be held at the Palmer House. Exhibits will cover all phases of medicine and the medical sciences with particular emphasis on graduate medical instruction for the physician in general practice.

Application blanks for space in the Scientific Exhibit are now available and may be obtained by communicating with the Director, Scientific Exhibit, American Medical Association, 535 W. Dearborn Street, Chicago 10, Illinois.

A Stealthy Killer

The greatest number of accidental deaths from poisonous gases occur in wintertime because people are apt to become more careless about having enough ventilation when weather is cold, says the State Board of Health, citing the fact that there have been 12 deaths from the accidental absorption of poisonous gases during the past 5 years in Delaware as well as 27 deaths from the same cause which were reported as suicides. The national toll of deaths from poison gases was 1,800 last year.

Carbon monoxide gas is a stealthy killer—You cannot see it—it has no vapor or color. You can't smell it—it has no odor. But when coal, gasoline, wood, illuminating gas and many other fuels containing carbon are incompletely burned, carbon monoxide gas is released into the air. It sneaks into closed rooms, cars, garages, workshops and strikes its victims silently. When there is plenty of fresh air in motion the carbon monoxide mixes with it and it can do no harm. In closed places, carbon monoxide is a deadly poisoner. It enters the body through the lungs, stops the blood from absorbing oxygen and suffocates its victims.

WATCH FOR DANGER SIGNALS

If a person has been breathing even small amounts of carbon monoxide for a long time,

he gets a tight feeling across the forehead. Soon he has a throbbing headache and gets nervous, depressed, dizzy. His face may be flushed, his eye balls bright red. He may feel sick in the stomach and vomit. Finally he passes out.

When large amounts of carbon monoxide are breathed in there is no time for the warning signals listed above, the victim loses consciousness before he realizes that he is in mortal danger.

TREATMENT

Carry the victim to fresh air at once. Call a doctor.

If the victim has stopped breathing, or is gasping, give artificial respiration. Loosen the patient's clothes. Rub his hands and feet. Keep his body warm with blankets and hot water bottles. Don't let the bottles burn him. Keep him at rest.

Never let a carbon monoxide victim get up and walk about until the doctor says that he is entirely recovered. Many lives have been lost because people thought a patient could walk off the effects right after he came to. Exercise speeds up the attack of the carbon monoxide on the heart. When this happens, the patient may collapse and die before help can reach him.

PREVENTION IS SAFER

Drivers of motor vehicles and garage workers are among the groups of people most likely to be overcome by carbon monoxide gas. Avoid premature funerals, says the State Board of Health, by seeing that garage doors are fastened open when it becomes necessary to idle slow motors in the garage in cold weather. The exhaust from automobile engines always contains monoxide, harmless in the open—deadly in closed places.

Is YOUR heating system safe? Furnaces or stoves with chimney dampers closed too tightly may send unburned gases out into the house. Dangerous, too, are gas stoves or heaters when the connections leak illuminating gas.

Exercise care and have fresh air, advised the State Board of Health, which reminds the public that conserving heat is no help if it leads to carbon monoxide poisoning—or death!

Keep Children With Colds at Home

Children with colds should be kept home from school, out of contact with others, says the State Board of Health, for the common cold is especially infectious in the early stages and is readily confused with the early symptoms of many other contagious diseases, such as measles, pneumonia, and light cases of scarlet fever.

Though colds are not, ordinarily, considered serious, there are 4 reasons why children with acute colds should not be sent to school:

1. A child with an acute cold is too ill to learn much if he is in school.
2. There is the great danger of his infecting others with the cold.
3. He lengthens the time of his own recovery because of fatigue and exposure.
4. The cold may develop into more serious illness such as "flu," pneumonia, chronic sinus infection, or tonsillitis.

KEEP IN BED

In order to speed this recovery, children who are kept home from school should remain in bed and away from other children, even those in their own family. Especially should they be kept away from babies, as babies are particularly apt to catch colds and develop complication.

Rest in bed allows the child to build up his resistance and increases the chance for early recovery, while neglected colds are likely to string out all winter. It is no help to the child himself if he is kept home from school and then allowed to play around in the house, even though it does prevent infection of children not in the family. Nor is there much point in keeping him out of school and then allowing him to run around the streets or out-of-doors, particularly with other children who may catch his cold.

FIRST DAYS MOST INFECTIOUS

The most infectious stages of a cold are during the first 2 or 3 days, and children kept in bed during that time, are very apt to recover quickly. Only simple, easily digested foods should be served to them, along with plenty of water and other liquids as fruit juices, milk, beef broth or thin soup. Encourage as much sleep as possible.

Mothers with young children would do well to assemble a box of simple toys that may be

kept just for "in bed" days, things that will keep a child amused, yet resting quietly, while she goes about her household tasks. Peg boards, small blocks, cut-outs, a small doll, coloring book and crayons, or other inexpensive toys of this type are among the possibilities. They may prevent many a restless, fussy hour and prove of much more value than the small cost involved. They should, however, be of the type that can either be sterilized or burned at the end of an illness. Remember, too, that the sick child's dishes should be sterilized after he uses them to prevent the spread of the cold to other members of the family.

BOOK REVIEWS

A Textbook of Medicine by American Authors. Edited by Russell L. Cecil, M. D., Professor of Clinical Medicine, Cornell University Medical College. 6th Edition. Pp. 1566, with 196 illustrations. Cloth. Price, \$9.50. Philadelphia: W. B. Saunders Company, 1943.

The new edition of Cecil represents the latest views of some 200 contributors. The arrangement is etiological. There are 12 new subjects included, 31 old subjects have been entirely rewritten, and 8 "Introductions" have been added. The text is set in double columns, which we find makes for easier and quicker reading. The carefully selected illustrations are helpful. Immediately preceding the excellent index is a table of normal values for clinical examinations which will be much appreciated.

This sixth Cecil easily upholds the standards of its predecessors and it remains one of the leading American texts in its field. Extra credit should be given for writing and publishing such an outstanding text under wartime difficulties. We shall anticipate the 7th edition within another three years, or less.

A Surgeon's World: An Autobiography. By Max Thorek, M. D., Surgeon-in-Chief, American Hospital, Chicago. Pp. 810. Cloth. Price, \$3.75. Philadelphia: J. B. Lippincott Company, 1943.

This is the story of a poor Hungarian immigrant boy who earned his way through Rush via the snare drums. It is replete with drama, some pathos too, and plenty of philosophy. It reminds this reviewer of the autobiography of the late Franklin Martin, likewise fighting his way up in Chicago. Both

made the grade and both have left us some very delectable reading. Dr. Thorek's book is written primarily for the layman, but doctors will enjoy it even more, since certain tidbits of medical history are also here. This is really excellent reading.

The Sexual History of the World War. By Mangus Hirschfeld, M. D., Director, Institute for Sexual Science, Berlin. Pp. 346, with five illustrations. Price, \$1.98. Cadillac Publishing Company, 1941.

This is the first English translation from the German text of the author, who ranks, ac-

cording to Havelock Ellis, as the chief living authority on homosexuality. As the title would suggest, it is a rather sordid story, but seems authentic. Naturally the references to the literature are overwhelmingly German, but English, French, Belgian, etc., reports are also quoted. It is perhaps natural also that the author should be biased: as we read it the implication is that the Germans were not quite the bad boys the others were. The illustrations could have been omitted without detriment. This is a book for the most matured persons only.

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*Himes, *Medical History of Contraception*

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a Poor Scholar... because of a Poor Breakfast

MANY a child is scolded for dullness when he should be treated for undernourishment. In hundreds of homes a "continental" breakfast of a roll and coffee is the rule. If, day after day, a child breaks the night's fast of twelve hours on this scant fare, — or less — small wonder that he is listless, nervous, or stupid at school.

Pablum offers a happy solution to the problem of the school-child's breakfast. Mothers who learn about Pablum from their physicians are delighted to serve it, for it needs no cooking and can be prepared in a minute at the table — more quickly than many less nourishing foods. Right now, this feature is especially valuable in homes where the mother is engaged in war work. Pablum not only ends the bane of long cooking of cereals but in addition furnishes a variety of minerals (calcium, phosphorus, and iron) and the vitamin B complex. It is an excellent vehicle for milk.

PABLUM is rich in calcium and iron, minerals likely to be deficient in the school-child's diet yet needed in more than average amounts during childhood. Numerous clinical studies have demonstrated that Pablum gives good weight gains and increases hemoglobin values in both normal and sick infants and children. Reprints on request of physicians.

Pablum (Mead's Cereal thoroughly cooked) is a palatable cereal enriched with vitamin- and mineral-containing foods, consisting of wheatmeal, oatmeal, wheat embryo, cornmeal, beef bone, alfalfa leaf, brewers' yeast, sodium chloride and reduced iron. (The oatmeal form of Pablum is called Pabena.) MEAD JOHNSON & COMPANY, EVANSVILLE 21, IND., U.S.A.



"TOMMY, that's the third time this week you haven't learned your lesson. Why don't you listen to me when I tell you how to work the problems?"



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